

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—9TH YEAR.

SYDNEY: SATURDAY, SEPTEMBER 16, 1922.

No. 12.

Surgical Instruments

We are pleased to announce that good general stocks of our Surgical Instruments have arrived and that regular supplies are now coming forward. Members of the Profession are cordially invited to visit our Show Rooms.

Allen & Hanburys (Australasia) Ltd.

Instrument Makers to H.M. Army and H.M. Navy

AUSTRALASIAN BRANCH:

B.M.A. BUILDING : Elizabeth Street, Sydney



The "MERRICK" A Diningroom of Distinction

The "Merrick" Dining-room is distinguished by restraint and simplicity of line and structure, and with a studied harmony of perfection.



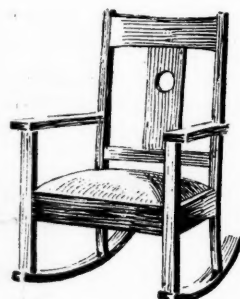
Bureau Bookcase,
27 in. x 48 in.,
£8/10/-

The plain straight lines and quadratic forms of the "Merrick" Dining-room bid fair to surpass all our previous achievements in the direction of charm, repose and effectiveness.

It comprises 5ft. Break front Sideboard, 4ft x 6ft Circular Extension Dining Table, 6 Small and 2 Carving Chairs. Dinner Wagon to match. Oak or Maple Fumed and Waxed.

£59/10/-

Beard Watson & Co. Ltd.
GEORGE STREET, SYDNEY.



Oak Rocker in
Fabrikoid, £3/10/-

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—9TH YEAR.

SYDNEY: SATURDAY, SEPTEMBER 16, 1922.

No. 12.

Table of Contents

	PAGE.		PAGE.
ORIGINAL ARTICLES—		ABSTRACTS FROM CURRENT MEDICAL LITERATURE—	
"Puerperal Infection: Its Prophylaxis and Treatment," by WILLIAM T. CHENHALL, M.D., F.R.C.S.	317	Surgery	334
"The Indications for Cæsarean Section," by CONSTANCE E. D'ARCY, M.B., CH.M.	322	Gynæcology and Obstetrics	335
"Pre-Maternity Work," by J. C. WINDEYER, M.B., CH.M., M.R.C.S., L.R.C.P.	325	BRITISH MEDICAL ASSOCIATION NEWS—	
REPORTS OF CASES—		Scientific	336
"Two Unusual Cases," by P. L. HIPSLEY, M.D., CH.M.	327	Transactions of the Council of the Victorian Branch	339
"Three Cases of Intestinal Obstruction," by H. I. HOLMES, M.D., CH.B.	328	Nominations and Elections	340
REVIEWS—		MEDICAL SOCIETIES—	
The Function of the Frontal Lobe	329	Brisbane General Hospital Clinical Society	340
The Examination of Water and Sewage	330	CORRESPONDENCE—	
Birth Control	330	Birth Control and Land Settlement	342
LEADING ARTICLES—		Diathermy and Radio-Therapy	342
Post-Graduate Instruction	331	Trachoma	343
THE WEEK—		Acute Pulmonary Œdema	343
Surgical and Medical Treatment of Gastric and Duodenal Ulcers	332	Dried Milk	344
Post-Mortem Bacteriology	333	OBITUARY—	
		Alexander Nicoll	344
		BOOKS RECEIVED	
		MEDICAL APPOINTMENTS	
		MEDICAL APPOINTMENTS: IMPORTANT NOTICE	
		DIARY FOR THE MONTH	
		EDITORIAL NOTICES	

PUERPERAL INFECTION: ITS PROPHYLAXIS AND TREATMENT.¹

By WILLIAM T. CHENHALL, M.D., F.R.C.S.,
Honorary Surgeon, Royal Hospital for Women, Sydney.

Nature's Barrier Against Infection.

LABOUR disturbs the normal sterility of the intact pregnant uterus. By a physio-pathological process fatty degeneration of the granular layers of the decidua demarcates the separation line of the maternal and foetal elements and the latter are expelled. Within the uterus there is suddenly created a vast traumatized wound of tremendous pathological potentiality. This important fact is not amply recognized. The uterine mucosa becomes denuded, the basal connective tissue exposed; at the placental site the muscular layer is almost bare and placental sinus thrombi intrude upon the cavity. Uterine retraction and contraction appose the utricular glands, whose proliferating epithelium rapidly recover the mucosa. Synchronous connective tissue regeneration forms its basis. White corpuscle invasion and profuse serous exudation complete the boundary between the living and necrotic tissues, and Nature's barrier against infection. The process,

therefore, closely simulates the normal repair of a granulating ulcer on any mucous membrane.

Birth Traumatism: The Gateways of Infection.

In these lacerated contused wounds tissue resistance is diminished and favourable conditions for bacterial inoculation are created. They invariably indicate the severity of labour or the difficulties or absence of patience, skill and care in rendering aid. Infection, superficial necrosis or deeper invasion will surely result if clots and necrotic residue, which are ideal media for bacteria, are present. Even saprophytic bacteria, thus favoured, may become intensely infective. Grave infection will surely follow the penetration of virulent putrefactive bacteria, streptococci, gonococci and colon bacilli. They are all awaiting the opening of the gateway.

If infection occurs, the lochia rapidly becomes putrescent, the infected wound dirty, greenish yellow and covered with foul discharge or diphtheroid membrane. Virulent bacteria will inevitably cause early local infection and, unless Nature's barrier is established, be early followed by extensive genital or other local infection and possibly by bacteraemia. The granulation zone formed from the third to the sixth day after labour may establish relative or complete immunity against constitutional invasion. Pregnancy vastly increases the pelvic cellular content and provides it with adequate vascular and

¹ Read at a meeting of the New South Wales Branch of the British Medical Association on August 11, 1922.

lymphatic supply. Deep laceration opens a gateway to this fertile field; resultant infection thus easily and rapidly creates a septicæmic process. *Hæmolytic cocci* excite little or no tissue reaction and very rapidly infect the blood.

Adequate tissue resistance will create a defensive barrier, lessen toxæmia, exfoliate the necrotic false membrane and present a healthy granulating wound.

Trauma may occur in spontaneous labour, especially during delivery of the shoulders, but is usually associated with forcible dilatation of the cervix or occurs during artificial delivery. Infection occurs or follows in the absence of ideal asepsis. An aseptic wound, carefully sutured, will normally heal; infection will cause suppuration, the sutures will cut and suppuration and infection follow the suture path.

The uterus, at the close of labour, presents an extensive aseptic wound. Polak deliberately left during days within the uterus ovular remnants of all kinds and even the entire placenta and membranes and found that spontaneous separation and expulsion were followed by normal involution. It is true that puerperal residue delays normal uterine retraction and contraction, diminishes tissue resistance and constitutes ideal culture media, but, in the absence of infection, it does not cause inflammatory reaction.

Uterine infection disturbs and delays normal repair; endometritis occurs, the swollen mucous membrane becomes covered with necrotic decidua and muco-sanguinous material. Involution becomes arrested by relaxation, œdema and circulatory stasis. The cervix swells and is covered with "diphtheroidal" membrane. Bacteria invade the placental sinuses and lymphatics, causing thrombo-phlebitis, paraphlebitis and lymphangitis.

Bacillary or putrid infection is usually limited by the granulation zone. Necrotic, fœtid decidua, often containing gas bubbles, covers the mucosa, the surface of which is greyish, greenish, yellowish or tarry and cannot be wiped smooth, as in the normal condition. Even intense toxæmia and local infection may occur, but blood invasion rarely, if Nature be left to work out her destiny. Some streptococci are usually present and, if tissue resistance be inadequate or the barrier be disturbed by meddlesome interference, they may invade the blood.

Coccal or septic infection in pure form does not cause fœtor. The mucosa is smooth and some vascular and lymphatic invasion almost invariably occurs.

The streptococci, almost identical with the organisms of diphtheria, scarlatina and erysipelas, are the most frequent and most virulent cause of bacteriæmia, though in mixed infection pyogenic cocci, colon bacilli and aerobic bacilli often co-exist.

Further, the most virulent cocci are those which have recently passed through the human body. I need scarcely remind you of the gonococcus, that frequent lurker, whose virulence enormously increases during pregnancy and especially during the puerperium, whose introduction not infrequently precedes the onset of labour, whose presence so dangerously aggravates subsequent septic processes, whose infection invades the mucous path to the peri-

toneum and causes considerable morbidity and end-less suffering.

Pelvic cellulitis is an inevitable sequence of deep cervical laceration followed by infection. I need not remind you of the continuity in planes, the proximity to the pelvic organs and peritoneum, the fertile vascular and lymph supply of this extensive field of adjacent areolar tissue.

If the cervix be infected, the uterus rarely escapes; if the uterus becomes infected, the cervix never escapes. The sequence of events following infection of a deep cervical tear rapidly occurs.

Trauma opens a gateway; bacteria invade the tissue spaces and lymphatics; an exudation, granulation, leucocytic barrier is established and local œdema forms a soft tumour, limited to the base of the broad ligament; later, resistance may yield and invasion extend towards the iliac fossa, beneath the utero-sacral ligaments and posterior peritoneum or forward beneath the bladder to the anterior pelvic and abdominal wall. Nature's barriers, the patient's greatest asset, will alone limit the invasion. The greater the trauma and the more virulent the infection, the more immediate and severe will be the effects.

Later absorption may occur or the exudation become fibrinous and dense and fix the genitalia or suppuration may result and, unless the surgeon intervene, the pus will finally escape on the body surface or into the bowel, bladder or peritoneum.

Finally, arteries will remain kinked, veins distorted and varicose, nerves pinched and pelvic organs massed and fixed as sequelæ.

Thrombo-phlebitis may follow either uterine or cervical infection. The ovarian veins are chiefly involved in placental site infection. Surgeons have tied these, with fairly satisfactory results, to prevent extension of infection. Implication of the hypogastric, iliac, femoral and saphena veins forms equally dangerous complications of any puerperal case. All cases are due to sepsis.

Follow the sequence of events! A shiver or rigor precedes a pulse and temperature rise. Suddenly, severe pain occurs in the foot, calf or groin. Rapid œdema extends upwards to the level of obstruction; the limb becomes tense and indurated, the skin translucent, mottled or marbled. The tender, thrombosed vein may be palpated as a sensitive cord beneath the inguinal ligament or at a higher level.

Perithrombosis and lymphangitis always occur during the acutely painful, alarming pyæmic illness.

Insure immediate absolute rest and avoid ill-warranted vaginal examinations in these cases. Remember the potential grave dangers of embolism, with its resultant, sudden death, the persistence of fever, the extension of thrombosis to arteries and resultant gangrene and the risks of initiating or awakening peritonitis.

Resolution may occur in a few weeks, but, on the other hand, œdema may persist for years.

Puerperal pyæmia causes one-half the deaths which follow infection. Follow the sequence of events! It is as easy to follow as it is certain to occur.

The invariable precedents are frequent vaginal examinations—mark, you, not rectal—in dry or otherwise abnormal labour, intra-uterine manipula-

tions, neglect of asepsis in *placenta prævia* and in controlling *post partum* hæmorrhage or meddlesome curettage of an infected uterus.

View every case of inter-partum temperature with suspicion! Leave the uterus and its placental site, as far as possible, alone! Nature may save where you would destroy.

I pass briefly over the onset, repeated rigors, rises and remissions of temperature, profuse sweats, rapid pulse, prostration, wasting, anæmia, rapid red cell destruction, inhibited leucocytosis and distant invasion by septic emboli with their resultant effects. You know them all. Also, you remember the negative abdominal signs beyond the relaxed, tender iliac or ovarian veins, the early occurrence and easy discovery of ulcerative endocarditis and the constant *post mortem*, though inconspicuous during life, finding of scattered septic emboli.

Prognosis, as you further know, is extremely grave. Not one in five recovers; death occurs in from one to three weeks, either suddenly from pulmonary embolism or more slowly from acute toxæmia and resultant asthenia. Superficial embolic abscesses are claimed to aid resistance. I have not witnessed its proof.

Vascular bacteriæmia occurs within a few hours after labour or follows uterine phlebitis. Usually phlebitis occurs; infected thrombi occupy the placental site and extend into the adjacent veins; bacteria penetrate these thrombi, invade the blood and therein multiply.

Clumps of virulent cocci reach the heart, lungs, pleura and brain or suppuration occurs and infected pus pellets form emboli, reach these and other organs or sites and form local abscesses. Early or *post mortem* some infected birth trauma or placental site lesion will invariably be found.

In lymphatic bacteriæmia the sequence is plain; gangrenous endometritis, with its sloughing diphtheroid exudation, covering the infected area, rapidly followed by lymphangitis, parametritis, with infiltration, œdema, possibly necrosis and phlegmon or an associated pelvic peritonitis.

The bacteriæmic victim in from one to three days following delivery feels and looks seriously ill. It is a true picture of distress and despair. A severe rigor occurs; fear fills the patient's mind and is depicted in her countenance, with its pale, clammy skin, pinched face, cyanotic nose and lips. The fingers and toes are cold and cyanotic.

Intense toxæmia is manifest in the high temperature and bounding pulse, early becoming soft and compressible, with rapid fall of blood pressure as the cardiac muscle yields under the poisoning process.

Incipient pallor becomes definite anæmia; the hæmoglobin content diminishes; leucocytosis is annihilated.

You have all witnessed the clinical course, the headache, sleeplessness, restlessness, delirium, especially if endocarditis supervene; the tympanites from intestinal paresis, respiratory, circulatory and excretory embarrassment, the intense prostration, pain and increasing consciousness of impending danger, each and all indicating the accumulating, intensely toxæmic process, which will end in puru-

lent peritonitis, with its classical concomitants, malodorous breath, persistent nausea and vomiting, followed further by increasing delirium, *facies Hippocratica*, hiccough and stercoraceous vomiting which mark the closing scene until death is ushered in on the greyish-beaded face and form, with a feeble, rapid pulse, increasing coldness, pulmonary œdema and finally coma within two to ten days. The lochia may be scanty and odourless, but is usually profuse, putrid and thickened with necrotic tissue.

Diagnosis of Puerperal Infection.

In the diagnosis of puerperal infection the *Rotunda* standard—temperature 37.2° C. (99° F.) and pulse rate 90 for three consecutive readings—is adopted in this hospital.

Exclude all extraneous causes of fever. Consider with well-balanced surgical judgement the pulse, temperature, as well as the history before and during labour, the possible traumata incidental thereto, their present condition, as well as all other accompanying signs and symptoms of the febrile condition.

Recall with profound thought every point. Examine the abdomen, the heart and lungs; inspect and examine the external genitals and the lochia. Collect the urine, examine it with the microscope; test the urine. Palpate the uterus; determine its precise size, position, consistence and mobility. Exercise the strictest possible asepsis. Discover, if possible, by recto-abdominal palpation in the lithotomy position the condition of the pelvic cellular contents, the uterine appendages and the peritoneum.

Finally, should considered judgement so demand, anaesthetize the patient, insert the sterilized, gloved finger within the uterus and carefully remove any retained membranes, placental tissue, retained secretions or blood clot.

In any case secure an uncontaminated specimen of lochia from the uterus. Empty the bladder and rectum. Place the patient under direct light in the lithotomy position. Cleanse and sterilize the anus, adjacent skin, introitus and vagina. Anaesthetize the vagina with 5% solution of cocaine or other drug. Introduce a speculum. Again, cleanse the vagina. Draw down the cervix with a double volsellum attached to the anterior lip. Cleanse and sterilize the canal. Carefully insert a long, curved glass tube; attach with rubber tubing a glass syringe. Collect the specimen. Withdraw the tube. Seal its ends with wax. Send the tube promptly to the bacteriologist with an urgent demand for the earliest possible report. Cultivations on agar, gelatine or bouillon may be recognized in twenty-four hours.

The prognosis of an individual case of puerperal infection must be based upon the patient's resistance at the time of infection or, more correctly, at the time of its manifestation, the site and extent of the local lesions, the precise time of infection or of its exacerbation and the character and virulence of the infecting organisms.

Certain fundamental questions present themselves in every case of puerperal infection.

Firstly, what is the original source of the infection? Is it autogenous or heterogenous? Relative immunity against autogenous infection is an accepted fact amongst all abdominal surgeons and gynaecologists. In this hospital the antiseptic and aseptic principles and practice are almost ideal and infection is rare; yet it occurs. It would seem, therefore, that when septic infection occurs within these walls it is autogenous in origin.

Obstetricians must crystallize and profit from surgical experience and be encouraged by surgery's progressively improving results. Prophylaxis affords the safest path.

Secondly, do cocci enjoy spontaneous transit upward to the uterus and its placental site? Bond proved that in twenty hours particles of indigo-carmin and litmus inserted in the cervix and upper regions of the vagina reached the Fallopian tubes and peritoneum.

Thirdly, what is the site of infection? This may demand close clinical study and scientific investigation; but the demand must be met in order that treatment may be rational and successful.

Prophylaxis.

Prophylaxis of puerperal infection is a national duty, but it is not yet accepted as such. It should at once be brought within the realm of preventive medicine and be made a notifiable disease. Witness, colleagues, *per contra*, the conditions under which it is fought within these delightful surroundings. Examine the antiquated buildings within whose wretched walls wondrous results are daily achieved. Imagine ideal conditions, all quite easy of achievement in this rich country, and conjure up the beneficent influence they would achieve for our suffering womanhood. Research within such new and hallowed walls would rapidly solve many problems at present debatable and spread knowledge and instruction throughout the land. Many precious lives now lost would assuredly be saved and untold morbidity be prevented.

The accoucheur would instruct the expectant mother, would exclude gonorrhoea by active treatment and interdiction of coition during late pregnancy, would overcome constipation, the exacerbator of colonic infectivity, and lessen by antiseptics the virulence of contained bacteria, would restore normal urinary function and prevent an obscure pyelitis from disturbing normal delivery or, in case of infection, from complicating the diagnosis, would heal all pustular lesions on the skin or elsewhere and establish ideal conditions for labour. Further, he would enjoin cleanliness, prohibit douches and urge the maintenance of a high standard of general health.

Again, the nurse would provide a room hygienically perfect, a firm, clean, sterile bed, sterile clothing for the patient as well as for herself and would give the patient a full, cleansing bath before labour and render the external genitals, the anus and its radiating folds and the skin sterile.

Instruct her to cut the vulval hair to the skin with scissors; lather the area, dry it and cleanse it

with ether; then paint the area and vagina with violet-green (1% solution of equal parts of crystal violet and brilliant green in half alcohol and water—Victor Bonney's plan) or similarly paint with iodine in spirit or a saturated solution of picric acid in alcohol. Do not douche the vagina. Repeat the painting prior to any operative procedure.

As accoucheur regard yourself as a surgeon, wear sterile rubber gloves and practice idealisms in antiseptics and asepsis. Realize that operative interference during labour is rarely a real necessity, that patience is a great virtue and Nature a trusty friend, that antiseptics, other drugs and anaesthetics have not appreciably diminished puerperal mortality and morbidity, that both not infrequently follow obstetric interference and that successful delivery without *post partum* morbidity constitutes the highest and noblest service of the family doctor.

Remember that artificial dilatation assuredly diminishes local tissue resistance, that bacteria are easily, if not inevitably, carried to the cervix and uterus, that the carefully preserved dilating membranes form the surest and safest dilator, that danger of infection immediately follows their rupture, that trauma in some degree will surely follow the use of forceps, that manual removal of the placenta is the most dangerous of all operations, that retention of secundines within a sterile cavity will do no harm unless hæmorrhage occur, that a dry labour is especially potential for infection and distinctly liable to it, that judicious aseptic discission of the perineum just before crowning is complete may prevent an extensive vaginal tear and that the incision sutured under ideal aseptic conditions will rapidly heal and disappear.

During the third stage of labour wait thirty minutes or until satisfied that separation is completed and constantly remember that placental residue is usually created by premature expulsion or forcible expression. Fear not; bleeding will rarely occur and the decidua almost certainly be expelled intact. Patience and confidence will be amply rewarded.

At this stage regard the puerperal endometrium as a traumatic wound which, aseptic, will undergo physiological repair, but with infection will become an extensive puerperal ulcer.

Understand that Nature's barriers represent her efforts to block invasion and to save life. Never douche a sterile uterus; local and constitutional risks exist. Uterine douching is alone justifiable against organisms which have effected entrance. Adopt the lithotomy position, expose the field under direct light, exercise strict asepsis and infinite care and use a double-channel metal or glass tube. Before douching collect the specimen of lochia from the uterus for the bacteriologist.

During intra-uterine douching guard against exposure and shock, watch the pulse and temperature, avoid disturbing the placental sinuses and causing clot or air embolism and, finally, gently compress the uterus and evacuate the fluid.

Protect your patient against undue morbidity during delivery. Especial care is necessary during delivery of the shoulders and in operative extraction

of the child and, above all, in the extraction of a dead foetus.

Examine and, if necessary, repair as early as possible all visible traumata under ideal asepsis. Secure correct apposition by passing your sutures deeply, with their entrance and exit paths closely parallel to the raw surfaces.

During recovery secure physiological rest and on the third day, unless infection contraindicate, elevation of the head and shoulders, which will aid vaginal drainage. Even slight infection contraindicates such early movement.

Watch daily the uterine involution, which, if delayed, may be aided by gentle massage of the organ and *ernutin* or pituitary extract in full doses. Such treatment will promote expulsion of decidua and clots, hasten the cessation of after-pains, enhance safety and promote recovery. Under such conditions a hot, mildly antiseptic vaginal douche is justifiable, since it will wash coagula from the vault and rapidly excite uterine contraction and expulsive effort.

Instruct your nurse to cleanse the whole external field every four hours and in doing so to cleanse invariably towards and never from the anus and to refrain from separating the labia. Finally, she should apply a gauze-covered wool pad and fix it with a diaper to the binder.

General Measures.

Adopt Fowler's position, with isolation, open air, shelter, abundant sunshine and nourish according to clinical demand. Appetite and tone will improve, red and white cells and the hæmoglobin content of the blood will increase and promote tissue reaction.

An optimistic, conscientious, capable nurse will compose, inspire and keep warm your stricken patient, will quieten restlessness and delirium by an ice-cap on the head or coils over the heart or abdomen, will control pyrexia by sponging, will avoid catharsis by the use of a small, simple enema each morning, will check diarrhoea by saline irrigation and by enemata of bismuth and starch. Thus, she will lessen or avoid the demand for hypnotics, sedatives and antipyretics.

She will combat peritonitis by 5% glucose enteroclysis, using Ramsay's uniform temperate appliance or keeping the contents of a douche can warm by a submerged, lighted, incandescent lamp.

Further, she will relieve pelvic peritonitis by flexing the patient's knees over soft pillows, will lessen peristalsis by avoidance of irritating food, will temporarily sustain the patient by glucose enteroclysis and relieve pain by small doses of morphine at regular intervals. This is a better plan than relieving severe pain at long intervals by one dose; there is less danger of habit.

Again, in nausea and vomiting she will cease all oral feeding and trust to glucose enteroclysis, which will also relieve tympanites.

In general peritonitis she may afford comfort by the constant application of heat to the abdomen.

Transfusion of citrated blood may be enlisted as

an aid in bacteriæmia. Some claim is made for its use.

I have not found either in practical experience nor in the literature convincing proof of the value of anti-bactericides, various sera or vaccines, though I visualize some young, keen obstetrician, with well-equipped laboratory, ultimately solving some of these difficult problems. The curative treatment of an individual case of puerperal infection presents an anxious, difficult problem.

Safety rests upon the avoidance whenever possible of the usually fallacious, fruitless and dangerous processes of irrigation, curettage and intra-uterine manipulations, upon insuring efficient uterine drainage and expulsive effort, upon conscientious, patient trust in Nature's protective processes, aided by the dilution of toxins and the strengthening of tissue resistance.

One would not disturb Nature's defending and healing process by scraping a diphtheritic throat or a gangrenous trauma of a mucous membrane. Then why scrape over gaping, thrombosed vessels where greater danger lurks?

Surgical aid is frequently demanded when local barriers are established and intact. I fear its invocation is often unwarrantably delayed. Certainly its application commands ideal conditions, but these should be provided.

(a) Birth traumata. All deep lacerations should be immediately repaired under ideal conditions of asepsis.

(b) Pelvic cellulitis. Early incision, as soon as a definite phlegmon has formed, followed by Carrel's method of T-tube continuous hypochlorite irrigation, will lessen absorption of toxins, pain and tenderness, as well as bladder and rectal distress, and promote recovery and without any permanent injury to the vagina. The tube should be kept in place by loose gauze packing and the flow regulated by clips.

(c) Pelvic peritonitis should be similarly treated when a definite mass is felt.

(d) Supra-inguinal cellulitis may be early relieved by extra-peritoneal incision and drainage.

(e) Thrombo-phlebitis. The ovarian and other veins have been tied and some success claimed. I am not convinced of the wisdom of a step so calculated to disturb Nature's barrier, especially since the danger of spontaneous embolism cannot be great where movement is limited.

(f) General peritonitis presents an extremely anxious and complex problem. Some surgeons will trust the anti-bactericidal efficiency of the intra-abdominal serum until pus forms and demands evacuation. I believe the serum once annihilated becomes a culture medium and that Nature's barrier, if formed, is established in the peritoneum and beyond it. Therefore, though each case must rest upon individual surgical judgement, I believe it advisable to establish early free drainage through the posterior vaginal vault and, if further demanded, through stab wounds in both loins. Five minutes under general or local anæsthesia will suffice for the operation.

THE INDICATIONS FOR CÆSAREAN SECTION.¹

BY CONSTANCE E. D'ARCY, M.B., CH.M. (SYDNEY),
Honorary Assistant Surgeon, Royal Hospital for Women,
Sydney.

IN preparing this paper the writer had before her mind the fact that it was to be read at a clinical afternoon, so the aim of the paper is to meet the needs of such an occasion by presenting clinical types rather than to be an exhaustive dissertation on the subject.

As surgical technique has improved, the operation of Cæsaean section has become a comparatively safe one and the indications for delivery by section have widened. So much so that frequently in current medical literature the question arises whether or not this operation is in recent times the subject of abuse. The immediate results of the operation are good, especially when the membranes are not ruptured and there have been few or no vaginal examinations and most especially when the patients have not been subjected to ineffectual attempts at delivery by forceps; yet there is a very real ultimate risk in intra-abdominal adhesions and in the possibility of rupture of the uterus through the scar during subsequent labours.

The majority of Cæsaean sections are performed in cases of disproportion between the size of the foetal head and the pelvis, due principally to contracted pelvis. In a series of 10,254 successive births at the Royal Hospital for Women, Sydney, Cæsaean section was performed seventy-eight times, craniotomy twenty-one times (including three cases of hydrocephalus) and pubiotomy twice. Of the seventy-eight Cæsaean sections the indication in fifty-five was pelvic contraction and in four unduly large and hard head, due to post-maturity. In accordance with the generally accepted principle, craniotomy was not performed in any case where the child was alive (again excluding hydrocephalus). It is not unreasonable to suggest that Cæsaean section would have been the operation of choice if these craniotomy patients had been seen earlier and the figures in this series could well have been Cæsaean section ninety-six, craniotomy three. The number of Cæsaean sections for contracted pelvis must diminish as women become educated to the necessity for presenting themselves early in pregnancy for examination by their medical attendants or at a pre-maternity clinic, for the conservative operation of premature induction of labour must remain the operation of choice for a moderate degree of pelvic contraction and more especially if the child's head during previous labours has been found to be relatively too large for the pelvis. The advantages of this operation are its ease of performance and its safety to the mother as compared with Cæsaean section, but there is undoubtedly a much greater risk for the child.

When the true conjugate is under 7.5 centimetres (three inches) and the child living and at full term, the absolute indication is for Cæsaean section. When the true conjugate is from 7.5 to 8.75 centimetres

(from three to three and a half inches) under the same conditions, the advantages of pubiotomy have to be weighed. This operation seems to be specially indicated where the head has partly entered the brim and forceps have failed to deliver, yet it is felt that very little more room is needed to complete delivery. When the true conjugate is over 8.75 centimetres (three and a half inches) usually after moulding the child may be delivered by natural efforts or with axis-traction forceps, unless the head is unduly large. It is, however, the doubtful cases which will always be anxious ones for the clinician, more especially when the patients are seen after they are advanced in labour.

One speaks glibly of the internal measurements of the pelvis, but who is there who can say with certainty that the *conjugata vera* is so much? At the best the estimation is only approximate. In all doubtful cases it is only just to the patient to give her the test of labour, although it is admittedly a fact that the mortality rate among women operated on "not in labour" is much lower than among those operated on after labour has been in progress some hours and particularly after the membranes have ruptured.

The following notes exemplify such a doubtful case and present many interesting points for discussion:

Mrs. A.W., primipara, aged twenty-five years, an apparently well-developed and healthy woman, was admitted to the Royal Hospital for Women at 10 a.m. on December 6, 1917. The first day after her last menstrual period was March 5, 1917. Strong labour pains commenced at 3 a.m. on December 6, 1917, but the membranes had ruptured three days earlier and she said that she had not had "proper rest or sleep" since December 1.

On examination it was found that the head was lying at the brim of the pelvis in the left occipito-posterior position and tending to mould and enter the pelvis. The external measurements were: inter-cristal, 22.5 centimetres (nine inches); inter-spinous, 25 centimetres (ten inches). She had regular contractions; the vaginal discharge was lightly blood-stained and not offensive; the temperature was normal and pulse rate 90.

On vaginal examination the *os uteri* was found to be nearly half dilated and the promontory of the sacrum was somewhat unduly prominent, but the conclusion was arrived at that, given time, the head would mould sufficiently to engage in the pelvis and that after rotation delivery with axis-traction forceps might be expected.

Accordingly she was given a sedative and after a rest her contractions again became regular and strong and the *os* was found to be fully dilated on the night of December 7, the head seemingly low in the pelvis on account of the degree of moulding. The head was rotated to the left occipito-anterior position and forceps applied; but these efforts to effect delivery failed. A second attempt was made after rotating the head back to the left occipito-posterior position in the hope that, after all, this position might in this individual case give more room. Again the attempt was ineffectual. The baby still lived, although its heart sounds were becoming quicker and weaker.

As the mother had shown the greatest anxiety that the child should be delivered alive, it was decided to perform Cæsaean section. On account of the amount of manipulation, every precaution was taken to protect the abdominal contents by delivering the uterus and carefully packing off the intestines. A living child weighing 3.75 kilograms (eight and a quarter pounds) and 61 centimetres (twenty and a half inches) in length was delivered.

Notwithstanding several vaginal examinations and repeated attempts at forceps extraction and the fact that the membranes had been ruptured three days before labour commenced, this patient made a very happy recovery. The highest evening temperature at any time in the puerperium

¹ Read at a meeting of the New South Wales Branch of the British Medical Association on August 11, 1922.

was 38.4° C. (101° F.), the average evening temperature for the first eleven days was 37.7° C. (99.8° F.), the morning temperature was normal on every day except one, when it was 37.2° C. (99° F.), and the highest pulse rate after operation was 104. After the tenth day the temperature morning and evening remained normal and the pulse rate had returned to 80. Her greatest disability during convalescence was foot-drop, caused by pressure, which yielded gradually to treatment by splint with massage and passive movement. Her wound healed by first intention and she left hospital on January 1, 1918.

All examinations and manipulations had been made under most careful circumstances and surrounded by all the conditions of asepsis usual in a midwifery hospital; so it was felt that the risk might be taken with comparative safety, a conclusion which had been justified by similar experiences. In this connexion it is interesting to quote Amand Routh, who wrote as long ago as 1910: "It is possible also that infection may be present if the membranes have been ruptured for some time and examinations made before admission, but the experience and reliability of those who have previously dealt with the case must be taken into consideration."

This case might well have been chosen for pubiotomy, but a few years ago the published results of pubiotomy were not so favourable as in more recent records:

The patient again presented herself in 1919, in her second pregnancy. The last menstrual period was early in June and at her request it was agreed that she should enter hospital a few days before the expected date of delivery and that she should again be subjected to Caesarean section with sterilization. However, she arrived at hospital at 1.30 p.m. on March 7, 1920, in strong labour and with a long loop of pulsating cord prolapsed between her thighs. The membranes had ruptured with the onset of labour at 9 a.m. on the same day and the patient had completed her domestic arrangements before coming to hospital. The loop of cord had been subjected to faecal contamination and handling. The temperature was 37.2° C. (99° F.) and the pulse rate 114. The child was lying in the transverse position and the *os uteri* was fully dilated. It seemed then that there was a definite risk of infecting the peritoneal cavity with what would probably be a severe form of infection if section were undertaken and as there was known to be only a moderate degree of contraction, all being in readiness to open the abdomen without delay in the event of the old scar giving way, it was decided to perform podalic version. As a result, a living child, weighing 4.5 kilograms (ten pounds) and measuring fifty-six centimetres (twenty-two and a half inches) in length was delivered rapidly with a small degree of laceration of the perineum as the only untoward happening. After a normal puerperium the patient left the hospital on the eleventh day.

Interest in delivery by podalic version has been revived recently by Potter, whose remarkable statistics must make obstetricians review their position, more especially in regard to minor degrees of pelvic contraction.

The case now cited of a woman who could not be delivered of a well-proportioned child of 3.75 kilograms by forcible attempts with axis-traction forceps, but who was comparatively easily delivered subsequently by podalic version of a well-proportioned baby weighing 4.5 kilograms, supports his contention. It is worthy of note in passing that the scar in this patient, which tolerated six hours of strong labour and internal podalic version, resulted from union after interrupted sutures with No. 3 plain catgut through serous and muscular layers, followed by a continuous suture of the serous layer

with No. 2 plain catgut. The strength of the union created by this suture material was further evidenced in the past few weeks by a patient with contracted pelvis previously operated on by the writer (Caesarean section), who arrived at hospital after having been in strong labour for twenty-six hours and after travelling over-night from Narrandera to Sydney and who showed no signs of stretching or weakening of the scar when the abdomen was opened for the second abdominal delivery.

In the series of Caesarean sections previously referred to, the indication was obstructed delivery due to fibroid twice, ovarian tumours four times and rigid *os uteri* twice. Many women with fibroids become pregnant and are delivered satisfactorily without section. Even when the fibroid is low in the uterus and seemingly likely to be a cause of obstruction, in the majority of cases in the later weeks of pregnancy it will be found that the tumour has advanced upward with the uterus over the presenting part or has become so flattened that it is no longer an obstruction. If the fibroid is causing pressure symptoms and the patient is seen early, myomectomy may be performed and the pregnancy is very frequently not interfered with. Otherwise, one should adopt an expectant attitude and apply the test of labour before resorting to Caesarean section. Hysterectomy may be performed, if indicated.

The recent position taken in regard to ovarian tumours tends to be that Caesarean section is not indicated, but that the tumour should be removed by abdominal section and the labour allowed to progress by the natural passages, provided there is no other contraindication. It seems to the writer that it is asking a great deal of a woman to go through the stress of labour immediately after an abdominal section and, moreover, that in the contraction and retraction of the uterus associated with a labour there is a considerable risk of slipping ligatures. So it would seem that if the abdomen be opened for the removal of the ovarian tumour at term and while the patient is in labour, it would be wise to deliver the patient abdominally at the same time. In the case of ovarian cysts or dermoids operators sometimes open into them through Douglas's pouch and evacuate their contents. The writer has only witnessed this operation on one occasion, when the advancing head, suddenly relieved of its obstruction, came down so rapidly that there was difficulty in securing a ligature around the ovarian pedicle. This could constitute a very real risk to this procedure, as also would the evacuation of the contents of a dermoid cyst into the vagina in its likelihood to cause sepsis. Luckily, this type of case becomes rarer each year with the better education of the profession and of women generally, resulting in early examination and diagnosis revealing the abnormality.

A rigid *os uteri* as an indication should be very definite before section should be undertaken. The following notes illustrate a type:

Mrs. R.H., *etatis* 31, in her fourth pregnancy, was admitted to the Royal Hospital for Women at 5 p.m. on December 4, 1920. Her previous labours had been instrumental, causing considerable lacerations of the cervix and vault of the vagina. These lacerations had been repaired at another hospital and the operation of ventro-suspension

had been performed since the last confinement. She had labour pains on and off for one week, also considerable headache before admission.

On examination the temperature was found to be 36.7° C. (98° F.) and the pulse rate 80. There was considerable oedema of the feet and legs. Examination of the urine revealed one-sixth albumin, the secretion of urine for the first twenty-four hours being 513 cubic centimetres (eighteen ounces). The systolic blood pressure was 120 millimetres Hg. The position of the fetus was transverse, with the shoulder presenting. The *os uteri* was very rigid and scarred and showed no signs of dilating. After consultation it was decided to perform Cæsarean section, "taking into consideration the complications—rigid cervix, albuminuria, transverse presentation and suspension ligament." A living male child, weighing 3.4 kilograms (seven and a half pounds), was delivered and the patient sterilized. The charts show the patient made a satisfactory recovery.

Another type of obstructed delivery still occurs, despite repeated warnings and that is due to ventro-fixation of the uterus. The writer reported two cases of this nature in THE MEDICAL JOURNAL OF AUSTRALIA (March 1, 1919) and the following case, which occurred in the present series under review, is worthy of mention:

Mrs. H.D., *atatis* 26 years, in her third pregnancy, was admitted to the Royal Hospital for Women at 5.40 p.m. on August 28, 1920, with the history that she had had a ventro-suspension (?) performed twelve months before. Since her last confinement inquiries revealed the fact that the technique used at the operation was: Two sutures of No. 2 chromic catgut were used, embracing a few fibres of the rectus muscle and the peritoneum on each side and a small portion of the uterus immediately at the fundus. The intention of the operator was to perform a suspension, not a fixation. Her last menstrual period was on November 6 and she came into labour ten days before admission.

Her general condition on admission was one to cause grave anxiety. She was delirious; her temperature was 38.4° C. (101° F.), her pulse thready and its rate 130; the tongue was dry and brown; the lips were cracked and covered with brown sordes. Her uterus was intensely tender and in a state of tonic contraction, causing her great agony. Bandl's ring was at the level of the umbilicus. The presentation was transverse; the fetal heart sounds were not to be heard.

On vaginal examination a most evil-smelling, greenish, purulent discharge was seen to be coming away freely; the cervix was tucked up high under the promontory of the sacrum, so that the *os uteri* could not be felt by the examining finger, but on entering the whole hand into the vagina it could be felt to be undilated. The anterior wall of the uterus, with the presenting part (shoulder), was bulging down into the vagina, all the uterine contractions expending their energy in this direction. It seemed that her best chance of recovery was offered by removing the uterus without incising it, a procedure which seemed quite justifiable, since the baby must have been dead for some days. This was accordingly done, flogging of the abdomen being prevented by placing Wertheim's clamps across the cervix and cutting below them and in the meantime surrounding the stump carefully by pads. An assistant immediately opened the uterus at another table and removed a decomposing fetus.

The day after operation the pulse was 88 and was not at any subsequent time during convalescence higher than 108. She developed no abdominal symptoms, the only incident worthy of mention being some suppurative of the cervical stump, which caused the temperature to rise gradually from the fourteenth day till the eighteenth day, when it was 38.4° C. (101° F.), after which it fell to normal.

An unusual case of mechanical obstruction to delivery was revealed on examining the hospital records, occurring in the service of Mr. J. C. Windeyer, with whose permission I record it:

The obstruction was caused by *osteitis deformans*, which had become rapidly worse during the pregnancy, so that at term the pelvic outlet was completely blocked to the passage of a fetus by the crossed thighs, which were fixed in that position by locked hip joints. The arms were crossed over the abdomen and could only be raised a short distance from its surface, so that Cæsarean section had to be undertaken with an assistant holding the arms upwards as far as they would go and the operator working, as it were, under a ledge.

Cancer of the uterus presents a special problem. If the cancer is diagnosed early and there seems a reasonable hope of saving the mother, it is generally accepted that the baby should be sacrificed and the uterus removed by radical operation. If radical operation is not indicated, the pregnancy should be allowed to proceed to term and Cæsarean section undertaken, followed by supra-vaginal hysterectomy to lessen the risk of sepsis.

Hæmorrhage, concealed, accidental and that due to *placenta prævia centralis*, may be an indication for Cæsarean section under special circumstances. In cases where the uterus is evidently filling with blood, in spite of treatment, and the patient's pallor and pulse show evidence thereof and the *os uteri* is not opening, even although there is no hope of delivering a living baby, Cæsarean section offers the best hope for the mother.

The writer has performed this operation for concealed accidental hæmorrhage on three occasions, with three maternal recoveries and three dead babies, one patient being in the series already referred to. As this represents a fair type, the notes are appended:

Mrs. G.B., *atatis* 36 years, in her sixth pregnancy, was admitted to the Royal Hospital for Women on March 13, 1919. The period of the pregnancy was full term. Abdominal pain commenced at 9 p.m. on March 12 and was mistaken for labour pains; bright, free bleeding occurred *per vaginam* on the morning of admission. She was greatly collapsed when seen; the temperature was sub-normal, pulse 148 and very soft, the skin very pale. The uterus was very distended and tender; the *os* admitted two fingers, but was not "taken up" and was not more open than is found in many multiparæ not in labour; the membranes were unruptured. While under observation her condition was noted to be getting rapidly worse, so section was quickly undertaken. The abdominal cavity was seen to contain a quantity of bright, liquid blood, which was observed to be coming from a linear rupture through the peritoneum and to some extent through the muscular wall at the fundus and also from an annular tear in the lower uterine segment in its posterior part to the same extent. The only explanation was that these two small ruptures were caused by the enormous distension of the uterus. A dead baby and a large quantity of blood clot were removed from the uterus and, as there was still a tendency to bleed, the uterus was removed. The patient made an uneventful recovery and was discharged on April 15, 1919.

In the 10,254 cases being reviewed for the purposes of this paper there were nine cases of concealed accidental hæmorrhage, with two maternal and eight fetal deaths. Cæsarean section was performed twice, with maternal recovery on each occasion. There occurred also 111 cases of *placenta prævia* (of all types, but chiefly marginal or lateral), with seven maternal and seventy-two fetal deaths, the latter including twins (once) and triplets (once). Cæsarean section was performed once only and internal podalic version was performed sixty-five times, with forty-seven fetal deaths, making a

fœtal death rate of over 72% for this method of treatment. The average period of gestation in all cases was 8.2 months (calendar), so it follows that a large number of these babies must have been viable. It is probable that much better results would have been obtained as far as the babies were concerned if section had been resorted to more frequently. The maternal mortality rate (6.3% for all forms of treatment) must be considered satisfactory, especially in view of the fact that in hospital practice in an industrial area many of the patients are almost moribund on admission. Cæsarean section is indicated for the mother's safety when there is profuse bleeding and the *os uteri* is not dilating. The following notes represent a type:

Mrs. M.A., *atatis* 38 years, in her eleventh pregnancy, was admitted to the Royal Hospital for Women at 8 a.m. on December 30, 1921, in the seventh month of her pregnancy, with a history of having had a very severe hæmorrhage that day. Her temperature was normal and pulse rate 108.

After a vaginal examination on January 1, 1922, there was a very severe and sudden hæmorrhage, which was checked by packing the vagina with gauze. While this was being renewed on the morning of January 3, 1922, there was another most alarming hæmorrhage, of a type and extent not often seen in midwifery practice. The vagina was rapidly packed again, but not so effectively as before. The pulse rate went up to 132; there was no sign of labour commencing and the *os uteri* was not dilated. With all expedition Cæsarean section was performed, followed by supra-vaginal hysterectomy, which seemed to be indicated by the continuance of bleeding after removing the placenta, which completely covered the *os*, and in consideration of the possibility of septic infection after the repeated packing of the vagina. The patient, moreover, already had ten living children and on this occasion a living male child, weighing 1.65 kilograms (three and five-eighths pounds) and 43 centimetres (seventeen inches) long, was delivered. She made a good recovery and left hospital on January 29, 1922.

In recent years eclampsia has come to be considered an indication for Cæsarean section, on the principle that as the fœtus and placenta are the cause of the condition, the more quickly they are removed, the more likely is a patient to recover. Moreover, the stress of labour always tends to increase the number and intensity of the convulsions and by delivering a patient by section she is relieved of this further risk. This line of argument does not explain the cases of *post partum* eclampsia. Instances have been reported of eclamptic patients who have continued to have great numbers of convulsions after delivery by section, a circumstance which would be most disconcerting to any operator.

In the series of cases reviewed in this paper there were two hundred and nine cases of puerperal eclampsia (of which twenty-two were *post partum*), with nineteen deaths, and at the same time six hundred and eighteen patients with albuminuria and pre-eclamptic toxæmia were admitted for treatment. The death rate was a little over 9%. Only one patient in this series had Cæsarean section. It is problematical if better results would have been obtained if section had been resorted to. There is a certain type of cases in which, in spite of treatment, the convulsions are increasing in number and intensity and the patient's condition going from bad to worse, the *os uteri* being undilated, that Cæsarean section is indicated. Such a case is the following:

Mrs. V.M.D., aged 25 years, primipara, was admitted to the Royal Hospital for Women at 8 a.m. on December 30, 1921, unconscious and cyanosed, with a history of having had six convulsions before admission. Her temperature was 36.1° C. (97° F.); her pulse rate was 80; her systolic blood pressure was 160 millimetres Hg.. She was secreting a small amount of urine containing one-third albumin.

Treatment was directed to elimination. Her bowels were well opened; then she was given morphine and later veratrine, which reduced her blood pressure below 100 millimetres Hg.. Nevertheless, she continued to have convulsions till 2 p.m., when it was decided, in view of the severity of the convulsions and the increasing cyanosis, œdema of the lungs and pulse-rate and rising temperature, together with the fact that she was a primipara with a closed *os uteri*, that abdominal section was indicated. A living female child was delivered, the patient had no further convulsions and left the hospital on January 30, 1922, feeling well, secreting a normal amount of urine free from albumin and with a systolic blood pressure of 130 millimetres Hg..

In severe cases of heart disease with œdema of the lungs several successful Cæsarean sections, performed under stavaine spinal analgesia or under local anæsthesia, have been reported; and in view of the very grave risk the mother runs in going through labour in this condition, this would seem to be the best method of effecting delivery.

In conclusion, the analysis of figures undertaken for this paper would seem to indicate that Cæsarean section could with advantage have been performed more frequently. The writer believes that, so far as the work of obstetricians in general in this city is concerned, this conclusion would hold good rather than the reverse.

PRE-MATERNITY WORK.*

By J. C. WINDEYER, M.B., CH.M. (Syd.), M.R.C.S.,
L.R.C.P. (LONDON).

Lecturer in Obstetrics, The University of Sydney; Honorary
Surgeon, Royal Hospital for Women, Sydney.

THE subject which I bring under your notice this afternoon, is one that is being discussed in many quarters and its full consideration would take a great deal more time than is allotted to the reading of a paper at a clinical meeting.

I will merely touch on one or two aspects of this important subject.

Pre-maternity work is a most important branch of preventive medicine. Its main object is early diagnosis. The result of this early diagnosis is the prevention, alleviation or cure of the greater number of the complications of pregnancy, labour and the puerperium. We have two common illustrations of its importance in the patients on view to-day. The first is with albuminuria, which, if undiagnosed, would in a large proportion of patients develop into eclampsia, with its dangers to mother and fœtus. In other cases the fœtus would die *in utero*. If the condition is diagnosed early and treatment is undertaken, we are able to carry some of the patients on to term; in others timely induction will procure a viable fœtus and under less favour-

* Read at a meeting of the New South Wales Branch of the British Medical Association on August 11, 1922.

able conditions induction will prevent the onset of eclampsia.

Secondly, there are two women with the foetus presenting in the occipito-posterior position. The danger in these cases lies chiefly in the fact that the position is unrecognized and that forceps are applied with the occiput directed backwards. Diagnosed beforehand, the treatment is simple. Firstly, methods which tend to cause flexion of the head are applied. If these are unavailing, manual rotation is carried out before the application of forceps.

The field of preventive obstetrics is a large one; the following figures indicate its scope: From 12% to 15% of pregnancies end in abortion. From 3% to 5% of women are delivered of still-born children. In one year (1915) in the Commonwealth, of 9,107 children who died within the first year, no less than 3,227, or 35%, died within the first week. A further large number of children either die during the first few weeks of life or continue to live with some more or less obvious defect due to pre-natal disease or intra-natal injury. It is hardly necessary with these figures before us to emphasize the necessity for further organization to deal with the causes of still-birth and of infantile mortality and morbidity.

Eardley Holland, in an intensely interesting recently published report on three hundred cases of still-birth, estimates that 52% are preventable. It is likewise true that a large proportion of the neonatal deaths are preventable, but the percentage may not be such a high one.

The field of preventive obstetrics is also a large one as regards maternal mortality and morbidity. Early diagnosis, with consequent correct treatment at the earliest time, will tend to reduce the mortality under almost every heading and the reduction in the present high morbidity rate will be in the same proportion.

THE MEDICAL JOURNAL OF AUSTRALIA in its leading article on August 5, 1922, concerning the *Maternity Allowance Act* called attention to the benefits to be derived from ante-natal care and suggested that part of the money now distributed in the form of the baby bonus, should be used to organize the work through the Federal Health Department.

There is no doubt that a great proportion of women are ready and willing to avail themselves of the benefit that would accrue to the nation if pre-maternity work were organized on a national basis. Our hospital statistics in a small way indicate the trend of public opinion.

Pre-Maternity Work at the Royal Hospital for Women.

The history of pre-maternity work at this hospital may be summarized as follows:

For many years a large amount of early pre-maternity work was done at the gynaecological out-patients' department. The minor derangements of pregnancy were treated there; the women suffering from the more severe derangements were sent into hospital for treatment. Some late pre-maternity work was also done at this department; the following procedure was then observed: As the patients came to make arrangements for treatment

by the members of the hospital staff, the Matron interviewed them and those with obvious or possible pelvic deformity, were advised to attend this department.

The arrangement, though a step in the right direction, allowed many abnormalities to escape recognition early enough for successful treatment and exactly ten years ago I made a proposal at a meeting of the members of the honorary medical staff that "a Pre-maternity Out-patients' Department should be inaugurated." This was carried unanimously and adopted by the Board of Directors two days later. Since then all the patients have been advised to attend this department for examination. That they avail themselves of the opportunity in increasing numbers can be readily seen from the accompanying figures. These figures represent the latest hospital statistics to December 31, 1921.

The total number of individual patients who attended the Pre-Maternity Department was 6,048. During the first two completed years of the existence of the department the individual attendance was 906, or 29% of the total number of confinements conducted by the hospital staff. During the last two completed years the individual attendance was 1,907, or 50% of the total number of confinements.

At a meeting of medical practitioners it is hardly necessary to emphasize the advantages of such a department, but I merely wish to point out to you that a large number of the patients with abnormal pregnancy whom you see undergoing treatment in the wards to-day, have been sent in by the honorary assistant surgeon in charge of this department.

In addition to the work done at the out-patients' department, we have had for the past five years an indoor pre-maternity department to which women and girls who are awaiting confinement are admitted. They are examined by one of the resident medical officers on admission and later on by the honorary medical officer in charge. This department has proved to be of the greatest importance from a teaching point of view, as it is utilized for instruction of students in the various methods of examining pregnant women.

Approximately 20% of the women confined in hospital come through this department.

Adding the figures of the two pre-maternity departments together and comparing them with the total number of confinements, we find that about 70% of our patients have had some examination beforehand.

I do not wish to lead you into believing that we are doing everything that could be done in the way of pre-maternity work with all of these women, but these figures indicate that we are making fairly rapid progress in the proper direction and that in the majority of the cases that we deal with nowadays, the grossly abnormal has been recognized early enough for treatment to be of benefit to both mother and foetus.

The next phase is the pre-maternity treatment of the mother in hospital.

The staff of this hospital has been fortunate in that, since the main wing was opened seventeen years ago, there have been not only obstetrical and gynae-

cological beds, but also beds for the treatment of abnormal pregnancy. Into these beds are admitted women suffering from the disorders or complications of pregnancy. The commoner types of cases are, in order of frequency: (i.) Abortion in its various forms, unfortunately mostly inevitable or incomplete; (ii.) the toxæmias of pregnancy; (iii.) pycilitis; (iv.) heart disease.

In the obstetric wards we also find cases where the question of the induction of labour has to be considered either on account of minor degrees of pelvic contraction or on account of post-maturity. Frequently the question has to be decided of the alteration of an abnormal presentation, either before labour or early during labour, since this is of paramount importance to the welfare of mother and infant.

This short paper will give you an idea of the importance of pre-maternity work in regard to public health and in regard to the efficient conduct of an obstetric hospital. In obstetrics, as in all other branches of medicine, the most important part is early diagnosis.

Reports of Cases.

TWO UNUSUAL CASES.¹

By P. L. HIPSLEY, M.D., CH.M. (SYDNEY),

Honorary Assistant Surgeon, Royal Hospital for Women, Sydney; Honorary Surgeon, Royal Alexandra Hospital for Children, Camperdown.

EXTREME EMACIATION RESULTING FROM STARVATION DURING THE FIRST THREE MONTHS OF PREGNANCY.

D.G., aged twenty-three years, was admitted to the Royal Hospital for Women, Paddington, on July 25, 1921. She was just three months pregnant when admitted and was in an extremely emaciated condition, being literally nothing but skin and bone. Her husband said that she had vomited a lot during the first few weeks of pregnancy and had not taken any food whatever for the last two months. She was in a semi-comatose condition and lay quite motionless, with glassy, staring eyes. She would make no attempt to speak and would not swallow if food were placed in her mouth. Her pulse rate varied between 140 and 160. Her temperature was 38.7° C. (99° F.). She was so emaciated that the outline of the pregnant uterus stood out prominently just above the pubes. The bladder was empty and no gas whatever was in the intestinal tract; hence the anterior abdominal wall lay against the posterior wall, so as to reveal the outline of the vertebral column. The breasts, however, did not share in the general emaciation and had evidently enlarged slightly as the pregnancy advanced. The urine contained acetone and a trace of albumin.

Treatment.

Strychnine, digitalin and pituitrin were administered hypodermically and nasal feeding was resorted to. The patient gradually improved and after about ten days she was able to take a small amount of liquid nourishment by the mouth. The pregnancy was allowed to continue and after about two months the patient left hospital quite well, although rather thin.

She was asked to return at full time. On December 28, 1921, that is, when she was in the eighth month of preg-

nancy, she returned to hospital and gave birth to a male foetus weighing two kilograms (four and a half pounds). The second stage was rather slow and, in order to spare the patient, the infant was delivered with instruments. The patient made an uninterrupted recovery and the infant gained a quarter of a kilogram (about half a pound) during the first fortnight.

Commentary.

The emaciation in this patient was due to refusal to take food. Her intellect was feeble throughout pregnancy and even after labour there did not appear to be much improvement in her mental condition. An interesting feature of the case was the marked contrast between the uterus and breast on the one hand and the general wasting of all the tissues on the other.

COMPLETE INVERSION OF THE UTERUS.

N.Mc., aged twenty-seven years, has one child aged nineteen months and has had no miscarriages. She was confined on April 18, 1922, a baby weighing about three kilograms (seven pounds) being delivered naturally and without difficulty. Severe *post partum* hæmorrhage compelled the accoucheur to express the placenta. The patient collapsed immediately after the third stage, due apparently to excessive hæmorrhage. Exploration of the uterus was considered inadvisable at this time on account of the low condition of the patient. The bleeding ceased and the condition of shock gradually passed off, leaving the patient intensely blanched. Thirty-six hours after labour, a consulting obstetrician saw the patient and advised against any operative interference until her general condition had improved.

She was seen by me for the first time on the third day after labour. Her temperature was then 39.4° C. (103° F.) and she was intensely blanched and extremely weak. On the fifth day it was decided to give the patient an anæsthetic and to make an attempt to replace the uterus. The cervix, however, was found to be too firmly contracted to allow this to be done. It was decided, therefore, that it would be wiser to defer any further operative treatment until the temperature had dropped to normal. Eight days after labour I transfused into one of the veins of her forearm four hundred cubic centimetres of blood from her husband, whose blood on examination had proved to be suitable.

The temperature was between 38.3° C. and 39.4° C. (101° F. and 103° F.) when the transfusion was done; it remained about this level for another ten days. The general condition of the patient, however, improved greatly and on May 19, after the temperature had been almost normal for twelve days, an operation was decided upon.

Operation.

Under ether anæsthesia and after disinfection of the vagina the *fundus uteri* was held firmly with one hand and, after the bladder had been separated, the vesico-uterine peritoneal pouch was opened and the inverted funnel of the uterus was thus exposed. The cervix was then divided anteriorly and the incision was continued along the anterior wall of the *corpus uteri* as far as the fundus. It was then possible to re-invert the uterus. After this was done, the fundus was returned into the peritoneal cavity through the incision made between the bladder and uterus. The cervix was then grasped on either side of the incision with vulsellum forceps and the incision in the uterus and cervix closed with interrupted catgut sutures, after some of the redundant muscular wall had been removed. The incision in the vesico-uterine pouch was closed, except for an opening where a drainage tube was inserted. A drainage tube was also inserted into the pouch of Douglas. Both these tubes were removed in four days.

The temperature rose to 39.4° C. (103° F.) after the operation and remained between 38.3° C. and 38.9° C. (101° F. and 102° F.) for twenty-eight days. After the drainage tubes were removed, there was a good deal of purulent discharge for two weeks. The patient was quite well and left hospital five weeks after the operation.

¹ Read at a meeting of the New South Wales Branch of the British Medical Association on August 11, 1922.

THREE CASES OF INTESTINAL OBSTRUCTION.

By H. I. HOLMES, M.D., CH.B. (MELBOURNE),
Warrnambool, Victoria.

As cases of intestinal obstruction fall to the lot of every medical practitioner to diagnose and frequently to treat under conditions which he would hardly select, I think the following cases are worthy of record:

CASE I.—J.K., *etatis* 15 years, a male, was sent to hospital on account of intestinal obstruction by Dr. Bourke, of Koroit.

Previous History.

The patient had been reared on the breast and "Allenburys" food. He had thrived as a baby, but had had trouble with his diet in recent years. Tonsillectomy had been performed in 1916. He had had an illness, said to be diphtheria, in 1919 and influenza on two or three occasions. The patient had a congenital *talipes*. Three other members of the family were also affected in this way. He had always been selective in regard to his food and had refused certain foods, such as potatoes. He took very little root vegetables, because they "repeated." He had always eaten small meals. He had been habitually constipated, but had not been prone to vomiting. About four years ago he had had severe pains in the abdomen for one and a half days, but no vomiting and no diarrhoea. He had been run over by a buggy across the abdomen eight years ago; the accident had apparently not affected him and had not caused him to go to bed.

History of the Present Condition.

On recovering from an attack of "Influenza" about midnight on August 6, 1921, he was seized with abdominal pains, followed later by vomiting. He had a little breakfast on the following morning. The bowels, which had not acted for four days, were open twice afterwards. The pain, with recurring vomiting, persisted for the next three days. He was seen by Dr. Bourke at 5 p.m. on August 9, 1921, and transferred to Warrnambool.

Operation.

At 9 p.m. an incision was made through the right rectus muscle. Distended small intestine was traced to a constricted area over the pelvic brim, where a section was found very much contracted for about 6.25 centimetres (two and a half inches). Meckel's diverticulum was seen on the distal side of this constriction. The appearance was as if something had pulled the ileum down to just above the sacral promontory. No adhesions could be found, the appearance being that of a deficient or contracted mesentery. As it seemed that any attempt to liberate the constricted gut would lead to trouble, a lateral anastomosis was made between the proximal distended segment and the distal contracted portion close to Meckel's diverticulum. The distended portion was so thin and tense that the needle perforated the wall on two or three occasions, but the best had to be made of a bad case, as excision seemed to be out of the question.

During the night the patient was fairly comfortable. His pulse rate was from 108 to 124. Water was given by mouth and a saline injection *per rectum*. *Hydrargyrum subchloridum* in 0.03 gramme doses was given four times, followed by three doses of sulphate of soda and an enema during the next twenty-four hours. Flatus was passed freely and later the bowels acted with the enema. On the third day the temperature was about 38° C. (100.4° F.). The pulse rate fell to 88. The temperature rose on the fifth day to 39.9° C.; the pulse rate rose to 110 and there was a free action of the bowels. From the fifth to the fifteenth day the temperature was irregular and the pulse rate variable, being between 76 and 112. The bowels were freely opened, but there was distension below the umbilicus. On the fifteenth day pus was let out of the wound and a large pelvic abscess was opened and drained below the umbilicus. Four days later the temperature was normal and the pulse rate 72. Recovery proceeded without interruption till he was discharged on September 25, 1921.

From this date progress was rapid. The boy grew and gained in weight. An abdominal belt made to measurement had to be let out ten centimetres. All forms of food were taken without pain or discomfort. The bowels acted without medicine and on June 14, 1922, he was very well.

I am of opinion that the condition was congenital. It seemed to bear an analogy to Lane's ileal kink and may be explained as an example of "regulated embryological peritonitis" (Keith, in Jacobson's "Operations of Surgery"), but its close relationship to Meckel's diverticulum (vitelline duct) suggests that the process developed during the changes of foetal life or very soon afterwards and occurred as a result of the changes associated with the obliteration of the vitelline duct or omphalo-mesenteric vessels.

CASE II.—S.J., a male, *etatis* 30 years, was first seen at 10 a.m. on April 3, 1922. The pain began in the epigastrium two days previously, was continuous with exacerbations and was aching, not spasmodic. It was not accompanied by nausea or vomiting. The bowels had been opened three or four times on April 2. The temperature was subnormal and the pulse rate 68. On examination definite tenderness was detected over the appendical area. Operation was advised. I was consulted again at 2 p.m. The temperature was 37° C. (98.4° F.) and the pulse rate 72. He was sent into hospital. At 4 p.m. the temperature was 37.5° C. (99.6° F.) and the pulse rate 74. The urine was normal.

An operation was carried out at 7 p.m. under anaesthesia. A definite thickening was felt through the abdominal wall. McBurney's incision was used. Some coagulated lymph was seen over the appendix, but the latter could not be defined; it seemed as if it were encased. On opening this "case" on the inner side, the finger could be run round the appendix, which appeared to be lying in a retro-peritoneal pouch under the caecum. With difficulty the appendix was detached from the mesentery, which was above and not below and was much thickened, so that it was difficult to say which was appendix and which mesentery. The appendix, about 3.75 centimetres (one and a half inches) in length and swollen, was removed, but the stump could not be inverted. Peritoneum was drawn over the area and the wound was closed without drainage.

The appendix manifested acute inflammatory changes going on to necrosis.

The patient slept for six hours on the night following the operation, but next morning the skin was acting freely and there was a non-irritating, urticarial rash over the upper arms and shoulders. The temperature and pulse rate were rising till at 2 p.m. they were 38.4° C. (101.2° F.) and 92 respectively. There was an acetone odour in the breath and the patient had a toxic appearance. There was some pain and tenderness in the right hypochondrium and slight pelvic distension, but no tenderness. Fearing peritoneal infection, I reopened the wound. There was no free fluid. I inserted three drainage tubes and ordered continuous saline lavage. Later part of the saline solution stained with faeces was returned and there was passage of flatus. The patient had a fairly comfortable night; in all he slept for five and a half hours, but was inclined to be restless. There was an occasional skin action. The saline lavage was causing discomfort. A free serous discharge issued from the wound. The temperature was lower, but the pulse rate was rising. The distension was increasing, but the patient did not complain of pain. He was more toxic in appearance and had vomited for the first time. An enema was returned coloured and a good deal of flatus was passed. With purgatives, high colonic irrigation, enemata, turpentine stupes, piltuitrin, etc., attempts were made to secure a free action of the bowels. There was one return containing large pieces of constipated stool with grape skins, etc. On other occasions flatus and coloured fluid were passed, once a large quantity of offensive brown fluid with mucus. The temperature remained about the normal level, but the pulse rate rose steadily. The vomiting increased and became regurgitant in type and the patient was obviously losing ground. At no time was there any complaint or evidence of pain, although there was discomfort due to distension. On the morning of April 9, 1922 (*i.e.*, on the fourth day), he complained of pelvic pain. A finger was inserted into the wound and the caecum was found to be empty. I therefore decided to reopen the abdomen. Several coils of distended small intestine were

turned out of the pelvis. There was no evidence of peritonitis; the appendical area looked well; the ileum and jejunum were seen or felt to be distended, but there was a definite ileal kink from 7.25 to 10 centimetres (three to four inches) from the termination. The bowel proximal to this, though distended, was not tense and was of a fairly good colour. A Paul's tube was tied in, but no flow of ileal contents escaped. The ileum was found to be more tense and distended in its upper part. An incision was made into a tense coil and about one and a half litres (two pints) of yellowish fluid ran out. The incision in the bowel was closed, the coils returned and the Paul's tube brought out through the wound. There was not any subsequent flow through the tube, but the vomiting persisted and the patient gradually sank and died nine hours later.

The prominent features in this case seem to be the peculiar anatomical conditions of the appendix, associated with a definite ileal kink partially obstructing the contents. In addition, there was the total absence of intestinal colic, distension and accumulation of fluid not proximal to the kink, but increasing to the distal side, and the toxic condition early in the illness. The case still presents features difficult of explanation. It seems best explained as a case of acute appendicitis associated with an ileal kink, chronic stasis, auto-intoxication and paralytic distension of the small intestine, thereby increasing the kink and causing further obstruction. To have opened and drained the ileum earlier might have been wiser.

CASE III.—Mrs. B., *etatis* 59 years, was seen in consultation at Port Fairy on July 5, 1921. She had had an umbilical hernia for about thirteen years. Two days previously she was seized with acute pain in the hernia. She was seen by Dr. Albiston for the first time on July 5, 1921, and was transferred to the hospital, where I saw her shortly after (fifty-two hours after the onset of the obstruction). The patient was very adipose; her estimated weight was over one hundred and ten kilograms (seventeen stone). She had a large umbilical hernia with three dark, gangrenous patches. As the pulse was of fair volume and the condition apparently hopeless without operation, I decided to operate. Owing to the adipose condition, the abdomen had to be supported to enable the incision to be made. As it was impossible to define the umbilical opening and the hernia seemed to be on the point of bursting, I made a transverse incision about twenty-five centimetres (ten inches) long, so as to excise the whole of the affected area. No attempt was made to define the umbilical opening, but the whole was removed in one piece, necessitating resection of a large loop of intestine (colon) and a large piece of omentum. The hernia burst at one of the gangrenous patches during the manipulations. The distal (contracted) portion of large intestine was closed and a rubber tube tied in the proximal portion—no Paul's tube was available—and stitched to the right angle of the wound, which was otherwise sutured. The patient made satisfactory progress.

On September 2, 1921, I again journeyed to Port Fairy, made an incision vertical in the middle line, above and below the transverse incision and located from amongst an adhesive mass the two portions of large intestine—now recognized as the transverse colon—and made a lateral anastomosis. This was later found to be working fairly satisfactorily, a good deal of faeces passing *per anum*, but as the faecal fistula was still discharging and an attempt to close by suture had failed on October 28, 1921, I decided to excise the portion between the faecal opening and the site of anastomosis. An incision was made through the right rectus and about ten centimetres (four inches) excised, the opening in the bowel closed by inversion and the wound sutured. Progress was interrupted only by a slight abscess in the last wound.

On November 15, 1921, the patient was discharged with the wounds healed. Her bowels acted without difficulty, naturally and well. The patient soon resumed household duties. An abdominal belt was fitted to measurement and now her general health is as good or better than for years previously. She has a daily evacuation of the bowel.

I have to thank Dr. Rita Stang for skilful anaesthesia and Dr. Norman Albiston for valuable assistance and careful treatment of the patient following the different operations.

Reviews.

THE FUNCTION OF THE FRONTAL LOBE.

PROFESSOR BIANCHI, of Naples, is so eminent as a psychologist and neurologist and in particular so well-known for his years of labour on the function of the frontal lobe, that this translation of his collective investigations and philosophic reasoning in this direction will be read by all interested in the localization of cerebral function.¹

The opening chapters deal with the evolution of the nervous system in its bearings on localization and with the growth, form and structure and the various hypotheses concerning the function of the frontal lobe; these chapters are very thorough. The next two chapters are devoted to the author's methods of inquiry and a detailed clinical account of his experimental researches. Since these carry the basic facts they are the most important in the book. Chapters on the excitable cortical area of the frontal lobe and its significance and on association paths between the frontal lobe and the sensory regions of the cortex follow. Then three relatively long and discursive chapters on intelligence and language, emotions and sentiments and consciousness, respectively, finish the book.

As far back as the year 1892, Bianchi put forward the view that the frontal lobe was an organ of intellect (not the organ of intellect, as some would have him say) and that the work of the entire brain contributed to this, its highest manifestation. Some may remember his efforts to establish this doctrine in papers read at international congresses and discussions with leading European neurologists who have studied cerebral localization, especially his arguments with Flechsig, who taught that the temporoparietal area had more important functions of association and mental synthesis than the frontal lobe. As in these papers so again in this book we note indications of intolerance of criticism and polemic retaliation. After all, it is but a hypothesis which Bianchi advances and a hypothesis is no more than a tentative suggestion put forth to stimulate further investigation by all who are or believe themselves to be competent to undertake the task.

Bianchi's conclusions rest largely on a series of experiments on lower animals, chiefly dogs and monkeys, and any who have had similar experimental dealings, will realize the difficulty of analysing and accurately interpreting the resulting phenomena. It is only fair to Bianchi, however, to say that he attacked his problems with infinite care and patience. He selected intelligent animals, usually trained; he operated carefully; and, what is of the highest importance, the subsequent observations were prolonged over many months. Moreover, the animals were at the disposal of any who doubted his observations. Here we must mention a point which he repeatedly insists upon as fundamental, *viz.*, that to produce specific psychic changes in animals, it is necessary to mutilate both frontal lobes, not one alone.

Next to instance the criticism which has been levelled at this experimental work, some have remarked on the wide gap between the lower animal and *homo*. Others have drawn attention to adhesions between brain and *dura mater*, ventricular distension and changes of intracranial pressure as unavoidable occurrences in frontal mutilation and as possible causes in themselves of some of the psychic disturbances. Although these are details, in the establishment of the localization of function no detail can be disregarded. Again, others suggest that mutilation to the same degree of any part of the brain other than the frontal lobe might induce similar disturbance. This suggestion Bianchi refutes in other ways, but it is surprising that he has not supplied the complete answer, that is, the presentation of control animals operated upon as regards other regions and not showing specific change.

In spite of these and other criticisms, we think that the full account of the experiments here set forth will satisfy

¹ "The Mechanism of the Brain and the Function of the Frontal Lobes," by Professor Leonardo Bianchi; authorized translation from the Italian by James H. MacDonald, M.B., Ch.B., F.R.F.P.S. (Glasg.), with a Foreword by C. Lloyd Morgan, LL.D., D.Sc., F.R.S., 1922. Edinburgh: E. & S. Livingstone; Royal 8vo., pp. 348, with 49 diagrams and two figures. Price: 21s. net.

the majority that the mentality, or as much mentality as the lower ape and dog possess, was specifically altered as indicated. Hence the deduction that the frontal lobe is an organ of intellect is justified. Next we may say that Bianchi is not only an experimental pathologist, but an experienced psychologist and his concluding chapters on intelligence and language, emotions and sentiments and consciousness are quite pertinent to the thesis that the frontal lobes deal with high mental processes.

It is those who work on the lines indicated by this great Italian scholar who are most likely to elucidate the manifold problems concerning the mechanism of the brain, and his readers will be glad to know that the present publication is a kind of preliminary communication to a projected one dealing with clinical aspects and founded upon the vast store of human material left by the recent war.

Dr. C. Lloyd Morgan, another stout champion of naturalism, writes a sparkling foreword. As to the translator, Dr. MacDonald, we consider that he has performed a delicate and difficult task in a most efficient manner.

THE EXAMINATION OF WATER AND SEWAGE.

THE SYNDICS OF THE CAMBRIDGE UNIVERSITY PRESS have presented the second edition of a work on the chemical examination of water, sewage, food and other substances by Messrs. Purvis and Hodgson.¹ The volume is intended for the use of students preparing for public health examinations and others doing similar work.

The fact that a second edition is now published must be regarded as an indication that the book is in demand. Although the contents cover a wide range of useful information, we are not impressed with the manner in which this is presented, nor with the description of some tests. It would be almost impossible to carry them out if the instructions given were solely depended upon. As an example of this contention, we might refer to the test described for the determination of the calorific value of coal gas.

The first hundred pages are devoted to the tests usually applied to samples of water and sewage. This part is open to most criticism. Twenty-three pages of it are taken up with a large number of typical analyses of waters, quite interesting in themselves, but occupying a most disproportionate quota of a volume of this character. Twenty-seven pages are filled with a discussion dealing with mixtures of sewage with river and sea waters. These are subjects which might reasonably be found in general text-books on hygiene or in special articles and are certainly out of place here.

With regard to some specific matters, it is stated quite correctly that polluted waters may give off sulphuretted hydrogen, but there is no assertion that this substance may occur under certain circumstances in a perfectly good water. Amidst the profusion of tests given for the determination of nitrates in water, mention might have been made of the reduction with aluminium in a caustic alkaline solution, a recognized test having advantages over the zinc-copper couple. The determination of alkalinity in water is to be made with methyl orange as an indicator. This is crude. The nature of the alkalinity, whether from normal carbonates, bicarbonates or hydrates, is passed over in silence and no reference is made to the use of lacmoid or erythrosin as indicators. It would not be too much to expect in an up-to-date book dealing with water analysis an account of methods for the determination of hydrogen ion concentration. No methods for the determination of dissolved carbon dioxide in water are mentioned.

In the interpretation of results, rather too much weight is given to the absolute amount of chlorine in the water. Under the same heading we find two pages of calculations to be used in the various tests and these computations

can, by no stretch of imagination, be considered to have any relationship to the interpretation of results. This is merely a sample of the careless arrangement of matter.

A similar want of clarity and confusion of arrangement are found in the description of sewage and effluent tests. For instance, to determine the suspended solids in sewage we are told to use the filter paper method, while for the same determination in effluents the Gooch crucible test is given. As the latter is undoubtedly the most appropriate for both, this should have been stated in a definite manner. Nothing is worse for a student than to submit a number of tests for the same reaction or substance and leave him to find out without any guidance which is the best in all or any special set of circumstances. Under the heading "determination of dissolved oxygen in effluents" we find a description of the dissolved oxygen absorption test, the object of which is to ascertain the amount of dissolved oxygen an effluent will take up in a definite time at a predetermined temperature. In view of the importance of this character of an effluent, to which attention was called by the Royal Commission of Sewage Disposal, the "dissolved oxygen absorption" test calls for unequivocal treatment as such and should not be hidden away as if of no special import. The index gives no indication that this test is described in the volume.

Until Chapter I. is practically written anew, the redundant matter therein deleted, the tests presented with more precision and the general arrangement of the subject matter recast, this part of the book at all events cannot be considered as of much real value to the student.

BIRTH CONTROL.

THE author of a little book entitled "Safe Marriage" was well known in Egypt, France and England during the war, where she courageously faced the unpleasant problem of limiting and endeavouring to prevent venereal disease.

Sir William Arbuthnot Lane, in writing a preface to this work, bears testimony to the energy and perseverance of Ettie Rout in her effort to achieve this end, services which were recognized by the British Government and by the French Government. Ettie Rout was a journalist by profession and, once acquainted with the magnitude of the evil, did her best to meet it; she rendered great service from the fact that action by a woman attracted far more attention than any action men could have taken.

The purpose of the book is to indicate the desirability of early marriage as the only permanent solution of the venereal disease problem. Recognizing, however, that such a solution is a long way off and that promiscuity is at present an essential feature of our civilization, she describes in detail the various methods of prophylaxis and of contraception which may be employed. The descriptions and illustrations are very clear. The object is very well expressed in the concluding paragraph of the book:

"If not—if the immoral man cannot be made better but rather worse, much worse, by needlessly infecting him with syphilis, then clearly the ideals of beauty and duty demand that we should apply effective sexual sanitation to the nation until such time as we are all, every one of us, free from venereal disease. That time is not yet—and this is the essence of the whole problem. But victory is within sight. When it comes—then, and not till then—sex will regain its soul of loveliness. To this end—

"Let knowledge grow from more to more,
But more of reverence in us dwell,
That mind and soul, according well,
May make one music as before,
But vaster."

—TENNYSON."

The principal significance of the appearance of such a book is the clear indication that the discussion of this problem has become public and that mischievous reticence is disappearing.

¹ "The Chemical Examination of Water, Sewage, Foods and Other Substances," by J. E. Purvis, M.A., and T. R. Hodgson, M.A.; Second and Enlarged Edition; 1922. Cambridge: At the University Press; Demy 8vo., pp. 346. Price: 20s. net.

² "Safe Marriage: A Return to Sanity," by Ettie A. Rout; 1922. London: William Heinemann (Medical Books), Limited; Crown 8vo., with numerous illustrations.

The Medical Journal of Australia

SATURDAY, SEPTEMBER 16, 1922.

Post-Graduate Instruction.

THE stock-in-trade of a medical practitioner is his scientific knowledge and his technical skill. Skill can be acquired by constant practice and by emulation, provided that the student has received efficient training in the use of his tools. A few are born artists and by them a high degree of technical skill and aptitude is readily achieved. Dexterity is a highly desirable attribute of a medical practitioner and is well within the reach of the vast majority. The student usually obtains sufficient training in dissecting and in the use of surgical instruments to enable him to improve his methods and to perfect his technique without further assistance. It is true that the medical student labours under a grave disadvantage in regard to laboratory technique. He is rarely offered an opportunity of learning to carry out the more difficult manipulations in the chemical or bacteriological laboratory. This form of dexterity is easy to acquire and is of much value to the practitioner, since it enables him to undertake many diagnostic investigations which otherwise have to be referred to the practised laboratory worker. Fingers should be educated during student life. Once a man is possessed of technical skill, the fascination of the completion of neat work will impel him to seek opportunities to "keep his hand in."

The other asset of a competent medical practitioner is of a totally different nature. At best he can learn during his student life how to exercise a critical spirit, how to think and reason scientifically and how to profit by experience. He will usually accumulate a small amount of useful knowledge. Some of the so-called facts will have to be unlearned in after years, when riper experience and the march of science have corrected erroneous doctrines. In the short years of training he will lay the foundations of a sound knowledge of his profession, but if he cease learning when he passes his

final examination, he would remain ill-equipped for his important tasks in later life. At present the curriculum is not well adapted to the state of knowledge of health and disease. The artificial barrier between the fundamental processes involved in both and the clinical manifestations of disease needs to be broken down before the student can be given a good start in his career. He is apt to forget physiological principles and biochemical facts when called upon to deal with patients suffering from disordered functions and pathological conditions. It is clear, therefore, that the medical practitioner needs continued education if he desires to be expert in any branch of his science. For this reason various forms of post-graduate study are provided for those who recognize the necessity of endless learning. It is probable that medical journals offer greater facilities than any other means, for records of work carried out in all parts of the world, observations of undoubted authorities on the different branches of scientific medicine, expressions of opinion by experienced practitioners and critical analyses of old and new doctrines can be brought to the practitioner at regular, short intervals in his home. Medical journals have an additional advantage as sources of information in that complicated and intricate problems can be presented which, if discussed in a spoken address, might be misunderstood or ignored.

Post-graduate courses form an admirable means for the instruction of medical practitioners. In Melbourne and in Sydney excellent courses are given to those practitioners who care to devote a little time to study. The advanced course in obstetrics recently held in Melbourne may be cited as an example of valuable post-graduate teaching. The subjects were treated in a scientific spirit. The lecturers and demonstrators realized that it was essential to discuss their several subjects in a thorough manner, correlating physiological processes, pathological changes and clinical manifestations. The practitioner, no doubt, would elect to hear what he terms practical hints, by which he means cut-and-dried guides to diagnosis and treatment. Fortunately, superficial teaching of this kind is not admitted to a well-planned course.

The organization of post-graduate courses demands, time, skill, tact and enthusiasm. Success

can only be attained if the responsibility for the smooth working of the course is accepted by one or two competent persons. The plan is drawn up by a committee composed of men engaged in teaching and thoroughly conversant with educational methods. The lecturers and demonstrators are selected with care and circumspection and the whole-hearted collaboration is enlisted of each. Judgment is required in order that the available time is used to full advantage without imposing too great a strain on the attention of the participants. It is recognized that the majority of medical practitioners have become unaccustomed to crass changes of direction of thought. For this reason some harmony is sought between subjects of lectures or demonstrations held in quick succession. And, above all, the lecturers and demonstrators are invited to fashion their lessons to suit the occasion and to fill the needs of the participants. The temptation to use the opportunity for any indirect personal advantage has to be resisted.

With these aids and many others of a less elaborate nature the medical practitioner adds continuously to his stock-in-trade. The man who is too indifferent, too old or too self-satisfied to learn, is not a good practitioner. Given good intelligence, assiduity, modesty and enthusiasm, a medical practitioner may hope to acquire a little knowledge which may be of use to his fellow creatures before his course is quite run.

SURGICAL AND MEDICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS.

In the pathology of gastric ulcer in the human subject it may be assumed that under certain conditions the gastric mucosa is subjected to changes which ultimately lead to a process of necrosis and absorption. The several aetiological factors would seem to have one common effect, namely, the disturbance of the normal circulation in a localized area of the organ. Normally the coordinated action of the oral, fundal, pyloric and intestinal digestive glands is governed by the hormonal action of each set of glands. Disturbance of the hormonal action as a result of local stasis in the gastric mucosa would upset the proper balance between the digestive glands and it is assumed that the inhibition offered by the normal mucosa to the action of the proteolytic enzyme will be temporarily suspended. This would lead to necrosis and the absorption of epithelial cells. According to Bolton's doctrine, the absorption of these cells leads to the production

of a gastro-toxin which would be antagonistic to the mucous membrane and cause further necrosis. In the meantime, the hormonal activity of the fundal glands will insure a sufficient outpouring of the pepsin-containing secretion of the pyloric glands to complete the process started by the gastro-toxin. The reciprocal action of these glands is obviously an important link in the maintenance of the process. In devising any logical method of treatment it is essential to break the vicious circle without interfering with the proper balance between the acid and enzyme-producing glands. By restricting the amount and adapting the quality of the food taken into the stomach the activity of these glands is reduced. The exhibition of alkali will have the result of neutralizing the acid and thus of preventing further digestion in the stomach. One difficulty has presented itself in connexion with this expedient. Bicarbonate of soda in solution is frequently used to neutralize the hydrochloric acid of the fundal secretion. The reaction involves the liberation of carbon dioxide, which stimulates both sets of gastric glands and consequently prevents the effective neutralization of the acid fluid in the organ. Sippy suggested the use of magnesium oxide, which has the double advantage of a much greater power of neutralization of acid and of being non-stimulating to the glands. The rationale of the medical treatment thus depends, firstly, on the removal of physical irritation of the ulcerated area by food, secondly, on the reduction of proteolytic action by the restriction of food and by the exhibition of a bland alkali and, thirdly, on the temporary transference of digestion from the stomach to the intestine. It is held that in these circumstances no further gastro-toxin would be manufactured and that already in existence would gradually become adsorbed on the damaged mucosa without risk of necrosis in the absence of free acid.

Surgical treatment, on the other hand, ignores the bio-chemical process and relies entirely on a physical process. There are two methods in common use. In one the ulcer is not disturbed, but some other procedure is adopted, with the object of mitigating or altering the existing conditions to such a degree that healing of the ulcerated area may take place. The other consists in the complete removal of the site of ulceration. Among the means adopted in the first of these methods are such operations as gastro-enterostomy, pyloroplasty and jejunostomy. There has been some difference of opinion as to how the beneficial result of gastro-enterostomy is obtained. The majority of surgeons hold that benefit is derived from the fact that the emptying of the stomach is expedited, that distension is less likely to occur and that the lessened period during which its acid contents are in contact with a gastric ulcer favours healing of the latter. Another view as to the cause of relief after gastro-enterostomy is that a certain amount of neutralization of the acid in the stomach is allowed to occur by a reflux of the alkaline contents of the jejunum. Burge and Steinberg, by their gastro-enterostomy experiments on dogs, have recently claimed that this takes place.

The whole subject of gastric and duodenal ulcers was recently discussed in an exhaustive fashion at

the annual session of the American Medical Association held at St. Louis.¹ Dr. B. W. Sippy pointed out that, except when the ulcer was removed surgically, medical and surgical treatment contributed directly to the eradication of ulcer by removing hindrances to its healing. He stated that the ingestion of alkalis in carefully regulated doses would lessen or virtually destroy peptic activity and that an ulcer would be more effectively protected from the results of gastric juice contact than if gastro-enterostomy were performed. Further, he claimed that this form of treatment had been successful in overcoming all grades of pyloric obstruction due to ulcer in 85% of cases. Of the remaining 15%, half would yield more slowly to his treatment. Nothing but surgical interference would do any good if actual tissue contraction existed. Dr. Sippy stated that the majority of patients treated by his method had been able to take up their regular work after a four-week period of accurate supervision.

Dr. A. D. Bevan, in a well-considered and careful paper, pointed out that, although many ulcers could be excised and cure brought about in this way, there was always a certain amount of risk to the patient, a risk which varied enormously with the skill and experience of the operator. He said that 90% of ulcers of the duodenum and 50% or more of the ulcers of the stomach could be cured by gastro-enterostomy with an operative mortality risk of less than 2% in skilled hands. He estimates that jejunal ulcer occurs as a post-operative complication in 3% of those patients submitted to gastro-enterostomy. This possibility must be borne in mind, for its advent may necessitate a second operation. Hochenegg has reported an incidence of eleven cases of jejunal ulcer in a series of five hundred and ninety patients on whom gastro-enterostomy had been performed.

Dr. W. J. Mayo pointed out the prevalence of the idea that, when a surgical operation has not been successful, surgery has "shot its only arrow." He could not see any reason why a second operation should not be undertaken in the presence of a definite indication. He pointed out that the operation of gastro-enterostomy has often been performed unnecessarily, though in good faith, and states that at the Mayo Clinic several hundred gastro-enterostomies have been removed. Included in this number were fourteen patients who had undergone their first operation at the Mayo Clinic in the early days of its existence. He concluded that patients in whom chronic obstruction or repeated hæmorrhage or acute or chronic perforation was present, should be treated surgically. All other patients should be treated medically until the ulcer was either cured or became chronic. Patients with recent ulcers should always be treated medically. He insisted, however, that patients with gastric or duodenal ulcers should not be treated according to a group, but that each case must be investigated individually.

When surgical measures have to be undertaken the tendency at the present day is towards excision of the ulcer with subsequent pyloroplasty or gastro-

enterostomy, if the ulcer is suitably placed and its site sufficiently mobile. In competent hands this is probably the wisest surgical measure to adopt in view of possible malignant degeneration occurring at a later date. Moynihan reported a death rate of 4.7% with partial gastrectomy. Other surgeons have published similar or slightly higher statistics. The death rate from malignant disease of the stomach among patients who have been treated for ulcer is appallingly high. Thus von Eiselsberg investigated the causes of death of forty-one patients who had been operated on for gastric or duodenal ulcer. Twenty-three *post mortem* examinations were made and it was discovered that in thirteen death had been due to malignant disease of the stomach. To remedy this, not only is early and correct diagnosis essential, but a recognition of the proper spheres of usefulness of medical and surgical treatment must be established.

POST-MORTEM BACTERIOLOGY.

CONSIDERABLE difference of opinion exists concerning the significance of bacteria found in the blood or tissues after death. Under certain circumstances the bacteriological confirmation of a diagnosis may be impossible during life, either because the infective focus is inaccessible or because secondary or contaminating bacteria cannot be distinguished from causal organisms in the open situations of the body from which specimens for bacteriological examination are collected. Certain workers have declared that bacteriological examinations conducted after death are valueless, chiefly because it is held that agonal or even *post mortem* invasion of the general circulation frequently takes place. This view has been opposed by others who have convinced themselves that agonal spread is rare and that the discovery soon after death of bacteria in the blood or in any particular organ may be regarded as evidence of an infection during life.

Dr. A. S. Giordano and Dr. A. R. Barnes have endeavoured to decide this question by a careful bacteriological examination in two hundred and thirteen persons after death.¹ They have arrived at the conclusion that, given good technique, reliance can be placed on the results of these examinations. The discrepancies between the *ante* and *post mortem* findings are explained by the discovery after death of an unsuspected process. In many focal infections the blood remained free from invasion up to the time of the autopsy. Further, they have reason to state that terminal infections do occur and at times form an important contributory factor in the cause of death. The chief element of error in *post mortem* bacteriological examination would seem to be the exuberant growth of secondary invaders, even with a generalized spread before death. It is quite conceivable that the tissue resistance may become so reduced by the infective process, that an unimportant contaminating organism is enabled to obscure the real causal agent of the disease.

¹ The Journal of the American Medical Association, July 1, 1922.

¹ The Journal of Laboratory and Clinical Medicine, June, 1922.

Abstracts from Current Medical Literature.

SURGERY.

Pneumococcal Peritonitis.

J. E. McCARTNEY AND JOHN FRASER (*The British Journal of Surgery*, April, 1922) discusses pneumococcal peritonitis. It is one of the most serious abdominal emergencies of childhood. Probably 2% of acute abdominal conditions in childhood are due to pneumococcal peritonitis. Clinically the disease may be divided into two main groups: (i.) Primary cases, acute and chronic, and (ii) secondary cases. The primary is also known as the idiopathic form. There are four paths by which infection may enter: (a) By the blood stream. (b) Through the mucous membrane of the gastro-intestinal tract. (c) By the lymphatic glands. (d) By the Fallopian tubes in the female. Rischbieth is a strong advocate of the hæmic origin of the disease, but the authors point out that the work of Blake and Cecil shows that lobar pneumonia can be produced only by intratracheal injection of pneumococci and not by intravenous injection. Later pneumococci enter the blood stream, so that the blood infection is secondary to the local lesion and not the cause of it. The limitation of the site of origin of pneumococcal peritonitis to the lower portion of the abdomen suggests other factors than a septicaemia. The evidence in favour of the gastro-intestinal path is not conclusive. The presence of pneumococci in the stools is not proof of pneumococcal infection and their existence in the intestinal walls probably follows rather than precedes the involvement of the peritoneum. If the infection passed along the tonsillar, pharyngeal, bronchial and mediastinal lymphatics, the disease would be expected to appear first in the upper segment of the abdomen. The pelvic peritoneum, however, is attacked first. McCartney and Fraser support strongly the theory of Fallopian tube infection. They maintain that pneumococcal peritonitis that is strictly primary is limited to the female and all of their fifty-six patients were female. It is a disease of the "dirty, neglected, unhygienic female child." In their last ten cases the same type of pneumococci was found in the vagina, Fallopian tubes and pouch of Douglas of the patients. In one case no organisms could be found in a smear from the upper portion of the abdomen. The age incidence of the disease shows that most cases occur between the third and seventh years. The clinical features vary according to its severity. It may be fulminating, with death in twenty-four hours, the local signs being masked by the overwhelming toxæmia. In a moderately acute case, for two or three days the infection is localized to the peritoneum and after this septicaemia may result, with quick pulse,

cyanosis, hyperpyrexia, delirium and hurried respiration. Some infections never reach this stage, but remain encysted and localized from the beginning. These are of the chronic type. Three striking points in the clinical history of the ordinary acute case are excessive vomiting, diarrhoea and bladder irritability. The last two symptoms are the result of the pelvic peritonitis involving the bladder and pelvic colon. Contrary to Rischbieth's pessimistic view, the authors think that much can be done by early operation and drainage. Gas-oxygen anaesthesia is recommended and some of the most successful results followed vaginal drainage. Blood transfusion by the citrate method has further improved the results and is especially useful when septicaemia is beginning to appear. To a child of six years two hundred and fifty cubic centimetres are given.

Gastric Ulcer After Gastro-Enterostomy.

EUGENE KLEIN (*Annals of Surgery*, December, 1921) contributes a paper on the persistence of gastric ulcer after gastro-enterostomy. Of the different methods of dealing with gastric ulcers the chief are gastro-enterostomy with or without pyloric exclusion, excision of the ulcer by knife or cautery, excision combined with gastro-enterostomy, segmented or sleeve resection to which may be added a gastro-enterostomy, partial gastrectomy and pyloroplasty with or without excision of the ulcer. In recent years the tendency to the non-radical procedures has increased. Sherren has a leaning towards gastro-enterostomy and considers that permanent healing of free ulcers is brought about by gastro-enterostomy, but that those adherent to the liver or pancreas do not heal completely. Paterson and Coffey regard gastro-enterostomy as the best treatment for gastric ulcers and many other authorities hold the same view. But the numerous failures following short circuiting alone have produced disappointment. Haemorrhage and perforation have occurred in gastric ulcers after gastro-enterostomy. The danger of carcinomatous degeneration has to be remembered. Some authorities think that this is very likely to occur, but others are not so alarmed at the possibility. In many instances the gastric symptoms have persisted after the operation. Further, typical gastric ulcers have developed at some distance from the suture line after gastro-enterostomy. After reviewing the results, Klein is of the opinion that in chronic gastric ulcer, whatever procedure is adopted, it should include destruction or removal of the ulcer.

Benign Tumours of the Stomach.

GEORGE B. EUSTERMAN AND ELMER G. SENTRY (*Surgery, Gynecology and Obstetrics*, January, 1922) report twenty-seven cases of benign tumours of the stomach. The patients were treated in the Mayo Clinic between 1907 and 1921. Ten were suffering from myomata, five from fibromata, four from angiomata, two from dermoids, one from gastric

polypsis, two from adenomata and three from polypi. Benign tumours of the stomach represent but little more than 1% of all gastric neoplasms. Many of the patients sought relief from symptoms caused by the tumours; in others the condition was found by accident. The myomata, when situated in the pyloric area, produced symptoms suggestive of chronic ulcer. Pain, hyperacidity and food retention were present. Some of the tumours were palpable. The angiomata were of considerable size. One was eleven by three by two centimetres and was eroded at the apex, which accounted for the hæmatemesis and anaemia. It was attached to the anterior wall. Of the patients with dermoid tumours, one had gastric disturbance and hæmatemesis, the other complained only of a swelling in the abdomen. This tumour was larger than the stomach and was attached to the posterior wall and lay in the lesser sac. The polypi were mucous and were found during some major operation on the stomach. The case of gastric polypsis is the only one found during eight thousand operations for gastric lesions. When a patient has acute gastric hæmorrhage, *achylia gastrica*, increased motility and abundant mucus like egg-white, the lesion is probably gastric polypsis.

Pancreatic Cysts and Pseudo-Cysts.

A. PRIMROSE (*Surgery, Gynecology and Obstetrics*, April, 1922) writes on the subject of pancreatic cysts and pseudo-cysts. He adopts the classification of Robson and Moynihan, viz., retention cysts, cystic adenoma and epithelioma, hydatid cysts, congenital cystic disease, hæmorrhagic cysts, pseudo-cysts and dermoid cysts. The association of acute and chronic pancreatitis with cyst formation is pointed out, the pancreatitis itself often accompanying gall stones or cholecystitis. A history of injury is obtained frequently in pancreatic cyst formation. Some confusion exists in the application of the term pseudo-cyst. Its use is sometimes restricted to the cases following injury where a collection of fluid from an injured pancreas forms in the neighbourhood of the pancreas or in the omental bursa (lesser sac). Such fluid is surrounded by connective tissue which is not lined by epithelium. Others hold that even in a true cyst of the pancreas the epithelial lining may be absent, owing to the digestive action of the contents and the resistance of the fibrous tissue to such action. This is contrary to what would be expected. Pancreatic ferments may or may not be present, even in true cysts. The diagnosis of a pancreatic cyst therefore rests upon its anatomical relationship to the pancreas or the presence of pancreatic tissue in its walls. The cyst may be unilocular or multilocular, single or multiple. Polycystic disease has been recorded. The treatment consists either in complete removal or in marsupialization. In a case of his own, Primrose, after opening into the peritoneal cavity and incising the posterior abdominal peritoneum, sutured the cut edge of the

latter to peritoneal edges of the wound and thus excluded the peritoneal cavity. He was then able to remove the cyst completely. In some cases removal of the cyst entails excision of a considerable amount of the pancreas. If complete removal is not possible, drainage of the cyst is the commonest method of treatment. This may result in a cure, but in some a troublesome fistula persists, the discharges from which may irritate the abdominal wall. Pancreatic cysts may occur in patients of any age.

GYNÆCOLOGY AND OBSTETRICS.

General Œdema of the Fœtus.

NORMAN B. CAPON (*The Journal of Obstetrics and Gynecology of the British Empire*, Summer Number, 1922) gives a full account of the condition spoken of as general œdema of the fœtus, which has been defined by Bal-lantyne as "a rare condition of the fœtus characterized by general anasarca, by the presence of fluid effusions in the peritoneal, pleural and pericardial sacs and usually by œdema of the placenta and resulting in the death of the fœtus or infant before, during or very soon after birth." The ætiology is discussed with reference to the various published accounts. Among the maternal causes attributed to œdema, syphilis, manifest renal diseases and anæmia have been incriminated. The list of paternal causes includes syphilis, œdema and icterus, alcoholism, anæmia and lead poisoning. Among the fœtal causes, those of mechanical origin are cardiac anomalies, umbilical cirrhosis, umbilical hernia and absence of the lymphatic system. In some instances a non-mechanical fœtal origin has been postulated in the absence of vascular or lymphatic obstruction. In the last place, the author deals with the views held concerning primary placental causes. He is inclined to the opinion that the changes in the placental tissue are evoked by poisons emanating from either the mother or the fœtus. He gives a description with the clinical details of eight instances of this condition. In all the mothers had previously been pregnant. Miscarriage or still-birth was present in the history of each woman. The general health of the mothers was unsatisfactory. The most common symptoms were those associated with hydramnios. In none was there any definite evidence of syphilis. He was unable to obtain definite evidence of renal disease. None of the patients had eclampsia. The pathological findings were unsatisfactory. In one case only was the mechanical cause discovered in the fœtus. Hæmatopoiesis was the most prominent finding. No spirochaetes were found in the tissues. In the placenta there was crowding of the villi and overgrowth of the intravillous connective tissue. It is suggested that this change leads to the compression of the chorionic vessels which gives rise to impairment of the

fœtal nutrition and, by increasing the peripheral resistance in the placental vessels, causes increase of fœtal blood pressure with cardiac hypertrophy. The fœtus responds to the impairment of nutrition by an increase in blood formation. When the newly-formed red cells no longer suffice to maintain healthy metabolism in the fœtal tissues, exudation of fluid takes place into the hypertrophied placental villi and into the fœtal serous sacs and subcutaneous tissue. Capon calls attention to the resemblance between polycythæmia of the fœtus as observed in general œdema and erythræmia of adults.

Suppurating Uterine Myomata.

W. E. DARNALL (*New York Medical Journal and Medical Record*, July 5, 1922), writing on the subject of suppurating uterine myomata, states that Le Roy Broun in 1918 reported a series of two hundred and sixty-two cases of uterine myomata, in one of which there was evidence of suppuration with pus cells infiltrating the tumour tissue. In a series of twelve hundred cases reported by Deaver, only one such case of suppuration was encountered. The author, in the course of several hundred hysterectomies for myomatous uteri, has seen four cases of the condition. He distinguishes between necrosis, hyaline degeneration and suppuration and states that it is not correct to class suppuration among the degenerative changes of uterine fibroids, if by suppuration is meant the invasion of the tumour by micro-organisms of sufficient virulence to produce an abscess. Infection of a fibroid tumour may be secondary to pregnancy, trauma from an obstetrical or surgical procedure or to chemical or mechanical irritation. It may take place as a result of direct extension from a neighbouring organ. The process of infection is generally slow, but there may be a rapid increase in the size of the tumour, accompanied by local tenderness. Pain is often severe and there may be rigors and fever, accompanied by night sweats. If the suppurating tumour opens into the uterine cavity there is a foul-smelling vaginal discharge. As septic absorption takes place the patient becomes progressively weaker. Treatment consists in supravaginal hysterectomy as soon as a diagnosis is made.

Treatment of Hyperemesis Gravidarum.

C. OLDFIELD (*The Journal of Obstetrics and Gynecology of the British Empire*, Summer Number, 1922) has arrived at the conclusion based on over twenty years' experience that pernicious vomiting of pregnancy is always neurotic in origin. He found early in his career that this condition occurred in women who had manifested hysterical symptoms before marriage and that the symptoms disappeared if the patient were ordered an ordinary diet. He gives details concerning twenty-nine women, of whom seventeen were treated in the Hospital for Women and Children in Leeds,

five in the Leeds General Infirmary and seven in nursing homes. In one case he was eventually compelled to induce abortion because the patient's friends persistently reminded her that her family doctor had stated that, if abortion were not induced, she would certainly die. The treatment in all other instances comprised judicious handling and a full, ordinary diet. The nurses are forbidden to provide a bowl, even if the patient should vomit. The words "vomit" and "sickness" are not allowed in the presence of the patient. At first rectal infusion of 4% glucose solution is given. The patient is kept in a general ward and is assured that she will very soon recover. Oldfield records the history of some of his patients who on admission were desperately ill. He is satisfied that any toxæmia occurring is the result and not the cause of vomiting.

Radium in Gynæcology.

F. E. KEEN (*New York State Journal of Medicine*, January, 1922) reports his experience in the use of radium in gynæcological practice. This experience is based upon a series of 501 cases of benign tumours and 412 cases of malignant growths of the female pelvic organs. When properly applied, radio-therapy is of great value in gynæcological work; it does not supplant operation, nor should it be looked upon as a competitor of operative procedure. Indiscriminate use of radium must be avoided and applications by persons ignorant of the proper technique will do great harm. Radium is contraindicated in tumours larger than a three months' pregnancy or tumours of any size which are complicated by inflammatory disease or neoplasm of the adnexa. Radium should be avoided in cachectic states and in cases of large tumours with pressure symptoms and no accompanying hæmorrhages. Intra-uterine pedunculated tumours call for surgical operation, especially if they interfere with the passage of the radium applicator to the fundus. Calcareous tumours and rapidly growing tumours, accompanied by pain, contraindicate radium, while in young women the possibility of producing permanent sterility must be considered. Radio-therapy has its greatest use in small, uncomplicated tumours with hæmorrhage, as well as in myopathic uterine bleeding. Technique consists in curettage with immediate application of fifty milligrammes of radium element, which is left in the uterus for twenty-four hours. Little discomfort follows this treatment and menorrhagia rapidly ceases, although the menstruation following the application may show no alteration. Recurrence of hæmorrhage after several months calls for repetition of dosage. The author uses radium only when the malignant condition is surgically hopeless and advises against its use when there is extra-uterine involvement of such organs as the bladder and rectum. Radium application will diminish discharge and banish pain and render the patient comfortable, even if a cure is impossible.

British Medical Association News.

SCIENTIFIC.

A MEETING of the Western Australian Branch of the British Medical Association was held at the Perth Hospital on July 19, 1922, Dr. D. M. McWHAE, C.M.G., C.B.E., in the absence of the President, Dr. D. D. PATON, in the chair.

Inversion of the Uterus.

Dr. D. S. McKENZIE showed a uterus that had been removed at *post mortem* examination from a patient who had died twenty minutes after being admitted to hospital in a moribund condition. The uterus was that of a full-term pregnancy and was completely inverted and ruptured.

Septic Uterus Following Abortion.

Dr. McKENZIE also showed a uterus from a patient who had died of septicæmia following abortion. There was a small perforation at the fundus, which Dr. McKENZIE thought had probably been made by a sharp-pointed instrument, such as a knitting needle.

Hodgkin's Disease.

Dr. McKENZIE's third specimen was a colon from a patient who had died of Hodgkin's disease. Great enlargement of the solitary glands was present. The patient had suffered from persistent diarrhoea and enlargement of the spleen. There had been general enlargement of the lymphatic glands. The progress of the disease had been rapid and death had occurred six weeks after the onset of symptoms.

Acute Mastoiditis.

Dr. H. B. GILL read the notes of a case of acute mastoiditis of both ears occurring in a child aged two years. The *membrana tympani* had been incised and a cortical operation had been done on each side. The child had been dull and apathetic and had died two days later. *Post mortem* examination had revealed no cerebral infection. Death had been due to acute toxæmia.

Acute Dilatation of the Heart.

Dr. A. W. FARMER read notes on a case of coma following acute dilatation of the heart. This had been occasioned by severe muscular exertion of rowing. There had been no apparent cardiac lesion.

Acute Abdominal Condition.

Dr. F. GILL reported an acute abdominal condition occurring in a child subsequent to twelve days of diarrhoea. At operation straw-coloured fluid had been found in the peritoneal cavity, with no other lesion. The patient had made a good recovery.

Food Values.

Dr. J. DALE, O.B.E., read a paper on "A *Résumé* of Recent Work on Food Values" and illustrated it with lantern slides (see THE MEDICAL JOURNAL OF AUSTRALIA, September 2, 1922, page 267).

THE CHAIRMAN, Dr. McWHAE, in opening the discussion, thanked Dr. Dale for his interesting paper and said that the comparative absence of rickets and scurvy was very noticeable in Western Australia as compared with the large number of patients to be seen attending out-patient clinics in England. Noel Paton, of Glasgow, had proved the importance of defective hygiene and absence of sunlight in the production of rickets. Further, an extensive experiment had recently been carried out in a large town in India, where late rickets were common. Many thousands of people had been examined and it had been found that the cause of rickets had not been defective diet, but the absence of fresh air and sunlight. This was in support of Paton's views. Dr. McWHAE did not think that lack of vitamin was the essential element in the production of rickets and scurvy. Other factors, such as sunlight and fresh air, were also very important.

Dr. C. JOYCE congratulated Dr. Dale on his very able exposition of the subject and said that at the Brisbane Congress he had had the pleasure of listening to Dr. Elsie

Dalyell. She had demonstrated conditions in the human subject the result of improper feeding similar to those shown by Dr. Dale as the result of experiments on animals. Her most striking examples perhaps had been the graphs showing a sudden rise in the weight curve of infants on the breast, the result of giving the mother four cubic centimetres of lemon juice or a similar amount of cod-liver oil three times a day. In the former example the result could only be attributed to some other factor than the food value. He expressed the opinion that lack of vitamins in the diet produced harmful effects long before the diseases such as rickets, scurvy and beri-beri were recognizable. He had looked for and had found such cases. A boy, aged ten years, had been attending school four years and had not learned the alphabet. He had been suffering from indigestion and had a peculiar, white, waxy skin. The gums had been somewhat spongy and he had appeared to be very dull. It had been discovered that he lived almost exclusively on white bread and jam, declining all other foods. The parents had been instructed to give him porridge for breakfast, meat and vegetables for dinner and an egg for tea. Six months later he had come under Dr. Joyce's notice again while examining school children and it had been found that he could read quite well. The teacher had told Dr. Joyce that the change had been most remarkable and that he was then quite a smart boy. In such a case the condition must be attributed to the badly-balanced diet as well as lack of vitamins. Another case was that of a young English woman suffering from gastritis and general weakness. A few years previously she had been particularly bonny. Her colour had gone and she had become thin and miserable physically and mentally. After treatment for the gastric trouble she had been advised to eat porridge and whole wheat bread (to the latter she had been accustomed in England). A few weeks later she had looked somewhat like her former self and had expressed the opinion that the whole wheat bread had been responsible for the change. The lateness of the hour prevented the recital of other cases, but he was of opinion that many people in Australia were suffering through lack of vitamin B. Formerly oatmeal porridge had done much to save the situation, but, unfortunately, it was being replaced largely by articles which had already been prepared by cooking and it was an accepted fact that cooked foods, though containing a certain amount of this factor, gradually lost it on storing and that it eventually quite disappeared. Dr. Joyce thought that foods deprived of this factor formed too large a portion of diet.

A MEETING of the New South Wales Branch of the British Medical Association was held at the Royal Hospital for Women, Paddington, on August 11, 1922, Dr. C. H. E. LAWES, the Vice-President, in the chair.

The members visited the several wards where demonstrations were held and later assembled to listen to three papers.

Pathological Exhibits.

A small collection of pathological exhibits was on view in the vestibule of the main building. Among the specimens was that of the conjoined fetus to which reference is made below.

Eclampsia.

Dr. CONSTANCE E. D'ARCY showed four patients who had suffered from eclampsia and two from albuminuria of pregnancy. In three patients the eclampsia had developed after the birth. One patient had been confined of twins. She had had several convulsions before admission. Morphine had been administered, but had not prevented the fits. Venesection had been performed and half a litre of blood had been withdrawn. Following this the systolic blood pressure had fallen from one hundred and sixty to one hundred and twenty millimetres of mercury. Another patient had also been delivered and had had convulsions before admission. When in the hospital she had been given morphine, but the convulsions had continued. As she was a large-bodied, full-blooded young woman, she had stood venesection well. The amount of blood drawn was about five hundred and seventy cubic centimetres. The blood pressure had fallen from one hundred and ninety to

one hundred and thirty millimetres of mercury. Neither patient had had any further convulsions.

The third patient with *post partum* eclampsia had been attended by one of the nurses of the District Nursing Service of the Hospital. There had been no albumin in the urine at the commencement of labour. Dilatation had been slow. She had been delivered by forceps of a baby weighing 6.2 kilograms (eleven and a half pounds). Soon after delivery she had had a convulsion. After admission to hospital a second, not very severe, convulsion had occurred. The urine was found to contain a considerable amount of albumin. She had been given an injection of 0.3 cubic centimetre of "Veratrone." The systolic blood pressure had fallen from one hundred and sixty to one hundred and thirty millimetres of mercury. All the patients had been starved with the exception of water and barley water and had been treated by purgation and hot kidney packs.

Two patients were shown who had had *ante partum* eclampsia. One of these patients had been in strong labour at the time of admission. She had been given 0.03 gramme of morphine. Her systolic blood pressure had been one hundred and ninety millimetres of mercury. A convulsion had occurred whenever she had been disturbed, although she had been deeply unconscious. Under light anaesthesia a vaginal examination had been made, a catheter had been passed, an enema had been given and the stomach had been washed out. Before the tube had been removed water containing sulphate of magnesia and the compound powder of jalap had been run in. She had been given 0.3 cubic centimetre (five minims) of "Veratrone" subcutaneously. As a result of this treatment her blood pressure had fallen to one hundred and thirty millimetres of mercury. No further convulsions had taken place; the patient had been confined two hours later.

A second patient who had had *ante partum* eclampsia had been treated in a similar fashion and had regained consciousness without the occurrence of further convulsions. A few days later the quantity of albumin in the urine had again increased and the blood pressure had risen, notwithstanding a low diet and the administration of purgatives. Labour had therefore been induced. No further trouble had occurred.

Albuminuria of Pregnancy.

In presenting a patient who had had albuminuria of pregnancy, Dr. D'Arcy pointed out that her history illustrated the wisdom of not performing venesection in women before delivery. The patient had been in labour when admitted. She had been secreting very little urine, which had contained much albumin. Her systolic blood pressure had been two hundred and twenty millimetres of mercury. No convulsions had taken place. As soon as full dilatation had occurred, delivery had been effected by forceps. The placenta had not separated for two hours, when it had become partially detached and a severe hæmorrhage had occurred. The placenta had been manually removed. The patient had continued to lose blood and before the bleeding had been controlled, she had manifested all the signs and symptoms of a dangerous hæmorrhage. She was progressing favourably at the time of the meeting, but Dr. D'Arcy expressed the opinion that, had venesection been performed, the result of her *post partum* hæmorrhage would probably have been fatal.

Dr. D'Arcy discussed the question of the dosage of "Veratrone." She expressed the opinion that when morphine had been given, especially in large doses, caution should be exercised in the administration of "Veratrone" because of its powerful action as a respiratory depressant. The blood pressure, the pulse rate and the respiration rate should be recorded every fifteen minutes. If the blood pressure was falling no further dose would be required. If the blood pressure were not falling a second dose of from 0.18 cubic centimetre to 0.24 cubic centimetre should be given. If necessary, a third dose of 0.12 cubic centimetre might be given at the end of the next fifteen minutes. For patients who had not received any morphine and in whom there was no evidence of heart trouble, the initial dose should be 0.42 cubic centimetre (seven minims) and the second dose 0.18 cubic centimetre after twenty to thirty minutes.

Dr. D'Arcy also showed a woman with chronic nephritis who had just been delivered for the eleventh time. Her urine had contained a very large amount of albumin and her systolic blood pressure had been two hundred and thirty millimetres of mercury. Dr. D'Arcy explained that a patient of this type should not be given "Veratrone," on account of the hypertrophic and slightly dilated heart. She had experienced a fall in the pulse rate from one hundred and sixty to forty-six and in the respiration rate from twenty-six to eleven one-half of an hour after the administration of 0.6 cubic centimetre of "Veratrone" to a young woman who had not been the subject of chronic disease. This patient had recovered and had had no further convulsion. Large doses were, however, unnecessary and were dangerous.

Dr. D'Arcy's last patient in this series had been admitted with a systolic blood pressure of one hundred and sixty millimetres of mercury and severe albuminuria. After purgation, starvation, the administration of an alkaline diuretic and the application of hot kidney packs the blood pressure had fallen to one hundred and thirty millimetres of mercury, the secretion of urine had increased and its albumin content had diminished to a trace. The patient had not been confined up to the time of the meeting.

Cæsarean Section.

Dr. D'Arcy presented a woman who had been admitted from the pre-maternity clinic on account of disproportion of size between the head and the pelvis. The head had presented in the right occipito-posterior position. The head had appeared to be about 15.2 centimetres (six inches) in its antero-posterior diameter and had felt very hard. It had not engaged at the pelvic brim. Labour had commenced on August 6, 1922, but the head had not descended. There had been no sign of hydrocephalus. Cæsarean section had been performed and a baby weighing four kilograms (eight and three-quarter pounds), with a very large and hard head, had been safely delivered. The mother had also done well.

Brow Presentation.

Dr. D'Arcy presented a woman who had been admitted on August 4, 1922, one hour after the onset of labour. The membranes were said to have been ruptured at the time of the onset of labour. Palpation had revealed a fœtus lying obliquely to the right with its head engaging, but high at the pelvic inlet. The occiput had been pointing backwards and to the right. A provisional diagnosis of a brow presentation had been made. At nine o'clock on the following morning the *os uteri* had dilated to the size of a shilling piece. The forehead and the bridge of the nose had been felt as the presenting parts. Digital flexion had been performed. The labour had proceeded slowly. Early in the morning of August 6 anaesthesia had been induced and the diagnosis of a brow presentation with the occiput directed backwards and to the right had been made. Manual rotation of the chin to the front had been effected and extension had been promoted. Milne-Murray forceps had been applied and a fœtus weighing four kilograms had been delivered without difficulty. The brow still presenting. The child's heart had continued to beat for one hour, but respiration had not been established.

Ante-Partum Hæmorrhage.

Dr. JOHN HARRIS presented a patient, a multipara, who had been admitted on July 3, 1922, with the diagnosis of *placenta prævia*. The patient had had four living children, the youngest of whom was thirteen years of age. She had since had five miscarriages, the last having taken place in 1918. The last menstrual period had occurred in November, 1921. Two weeks before admission a small gush of blood had passed *per vaginam*. There had been no pain. The patient's condition had remained good. Abdominal palpation had revealed that the presentation was by vertex. Vaginal examination had shown a thick cervix still undilated. The placenta had not been felt. The membranes were intact, but had been stripped from the lower uterine segment. The head and the hand were presenting. The diagnosis of accidental hæmorrhage had been made. The patient had been kept in hospital and no further bleeding had occurred. On August 4, 1922, labour had set in and the head engaged in the right occipito-anterior posi-

tion. A still-born infant had been delivered without assistance. The fœtus, placenta and membrane unruptured had come away *en bloc*. The puerperium had been normal.

Transverse Presentation.

DR. JOHN HARRIS showed a woman who had borne five children and who had been admitted on August 7, 1922, in labour. The labour had started about twelve hours previously and the membranes had ruptured almost immediately. The uterine contraction had been irregular and not severe. At six o'clock in the evening after the patient's admission the abdomen was found to be very large and of irregular shape. The uterine lie was transverse. The fetal head had been palpated in the right flank and the back had been felt across the abdomen above the umbilicus. The heart sounds had been heard. The *os uteri* was dilated to the size of a half-crown piece. A prolapsed hand was the only presenting part. The hand had been replaced and Dr. Farranridge had introduced a de Ribes's bag into the lower uterine segment. Four hours later the uterine contractions had been stronger and the bag had gradually descended. After the expulsion of the bag internal version had been carried out and a foot brought down. The fœtus had been delivered in the right sacral posterior position, the arms had been extended and the arms and the head had been delivered by combined grip. The fœtus had weighed four kilograms and had been born alive and well. The third stage had been normal. The vagina, perineum and cervix had been intact. Both mother and child had done well.

Normal Labour.

DR. JOHN HARRIS also presented patients who had passed through normal labour and read the notes.

Pubiotomy.

DR. P. L. HIPSLEY presented a patient, aged thirty-three years, who had had seven children. The first three labours had been instrumental. The fourth child had been still-born. At the fifth labour the fœtus had presented by the vertex and delivery had been effected after pubiotomy had been performed by Dr. Windeyer. Labour had begun on August 14, 1922; the presentation was by the breech. After twenty-four hours the presenting parts had not engaged and the patient had become exhausted. It had therefore been decided to perform pubiotomy. Döderlein's method had been employed. After the bladder and the rectum had been emptied and the skin had been prepared, an incision extending 2.5 centimetres in length from the pubic spine had been made just about the upper margin of the pubic bone. The periosteum had been incised. A finger had been passed into the wound and the tissues had been separated from the posterior surface of the bone. A pubiotomy needle had been carried along the posterior surface as far as the inferior margin and had been caused to emerge through the outer and upper margin of the *labium majus*. A Gigli saw had then been attached to the needle and pulled through the upper incision by the withdrawal of the needle. Handles had been attached to either end of the saw and the bone had been divided. A gap of about two centimetres had been produced, which had sufficed for the delivery of the breech. A tight bandage had been applied and the patient had been kept on her back for three weeks.

Dr. Hipsley stated that the operation was a simple one, but that it should not be undertaken unless the patient were in a well equipped hospital. Serious bleeding at times occurred on the withdrawal of the needle as a result of injury to the large venous plexus between the bladder and the pubes. The operation was used when there was doubt whether the presenting part would or would not engage. It could be performed with safety after the patient had been in the second stage of labour for several hours and when the presenting part had not passed the superior strait. Under these conditions the risk attached to Cæsarean section increased with the length of labour. Pubiotomy was contra-indicated if the *conjugata vera* measured seven centimetres or less.

Appendicitis Complicating Pregnancy.

DR. HIPSLEY showed a woman, aged thirty-two years, who had borne three children. She had been admitted to

the Royal Hospital for Women on February 14, 1922, complaining of severe abdominal pains of four days' duration. Examination had revealed pregnancy in the fifth month. Marked abdominal tenderness, particularly over the right iliac region, had also been noted and an indefinite mass had been detected. It was thought that the trouble had been localized. On February 15 the patient was much worse. The pain had been severe and constant. Fever had been present. There had been generalized abdominal rigidity. An operation had therefore been performed. The abdomen had been opened in the usual manner and a considerable quantity of thin pus had been found free in the peritoneal cavity. The appendix in a gangrenous condition had been removed. A stab drain had been inserted into the right kidney pouch and the original wound had also been drained. The patient had improved gradually; the tubes had been replaced by gauze after about ten days. At the end of the third week there was only a small amount of sero-purulent discharge. The patient had miscarried on March 12, that is, just under four weeks after the operation. The fœtus and placenta had come away intact. A week later the patient had been curetted on account of slight hæmorrhage. Three weeks later she had left hospital in good health.

Dr. Hipsley pointed out that appendicitis complicating pregnancy was necessarily a very serious condition. At the time of the rupture of the appendix the chances of recovery of this patient had seemed small. It was fortunate that she had not miscarried until nearly one month after the operation. During the interval the peritoneum had had time to deal with the extensive infection. Had the uterus emptied itself at an earlier period, Dr. Hipsley felt convinced that the infection would have become generalized and would have proved fatal.

Extreme Emaciation in Pregnancy.

DR. HIPSLEY read notes on a case of extreme emaciation due to starvation in the first three months of pregnancy (see page 327).

Inversion of the Uterus.

DR. HIPSLEY also read notes of a case of complete inversion of the uterus (see page 327).

Heart Disease and Pregnancy.

DR. H. A. RIDLER presented a series of patients suffering from heart disease complicated by pregnancy.

The first patient had been admitted when her pregnancy was in the sixth month. There was a history of shortness of breath, palpitation on exertion, slight swelling of the ankles and a dry, wheezy cough. The patient had had five living children. Two years previously abortion had been induced at the fourth month on account of the condition of the patient's heart. Examination of the heart had revealed mitral stenosis and myocarditis. There had been relatively good compensation. The condition had not warranted induction. The pregnancy at the time of the meeting had reached seven and a half months and the heart condition had been satisfactory. The patient had been kept in bed for a month and later had been given some exercise. The cough had been eased and digitalis had been used with discretion.

The second patient had been admitted on July 19, 1922. She had complained of increasing shortness of breath. The patient was in the ninth month of her pregnancy. The head was presenting in the right occipito-anterior position. The fetal heart sounds had been audible and the pelvic measurements had been within normal limits. The pulse had been regular and of normal tension. The apex of the heart had been in the middle line and a pre-systolic thrill had been felt. The first sound had been loud and had been preceded by a short crescendo, pre-systolic murmur. The second sound at the mitral and pulmonary orifices had been re-duplicated. The urine had contained a small quantity of albumin. Labour had set in on July 21, 1922, and had been very slow. On the following day the delivery had been completed with instruments. The extraction had been difficult on account of disproportion between the size of the fetal head and that of the pelvis. The infant had been still-born. The placenta had been removed manually on account of adherence. A uterine douche had been administered. The patient had ultimately recovered.

The third patient had had three living children. The last day of the last period had been June 1, 1922. She had

been admitted on August 7, 1922. According to her account, abortion had been induced on account of her heart condition four times. She had suffered from rheumatic fever at the age of fourteen. The diagnosis of mitral stenosis and myocardial inefficiency had been made. She was being treated at the time of the meeting with morphine and atropine as well as strychnine. While at rest in bed she felt well except for occasional attacks of dyspnea.

Funic Presentation.

DR. RIDLER showed a patient who had been admitted on June 26, 1922, to the labour ward. It had been stated that the membrane had ruptured during the night, but that there had been no pain. The patient said that she was in the seventh month of her pregnancy. She had had two living children and three miscarriages. On examination, small fetal movements had been felt. The fetus had been lying in the transverse direction, with the head to the right. The fetal sounds had been heard and their tone had been good. The cervix had been dilated sufficiently to admit one finger. No bag of membranes and no presenting part had been felt. The head had been pushed into the pelvis and external version had been performed. Four days later *liquor amnii* had been draining away and the uterus had been contracted. Dr. Constance D'Arcy had seen the patient and had advised induction of labour. The patient had been given a dose of castor oil and external podalic version had been performed. At six o'clock in the evening the *os internum* had admitted two fingers. A small loop of pulsating cord had protruded through the external *os*. This had been easily replaced. A foot had been felt over the internal *os*. Forty minutes later a sudden prolapse of the cord outside the vulva had taken place. The cord was no longer pulsating and had obviously been infected. Dr. Farranridge had performed podalic version under anaesthesia and had brought down one foot. Gauze had been tied around the foot, which had been left outside the vulva together with the cord. Shortly after midnight a still-born fetus weighing 1.4 kilograms had been expelled. The third stage of labour had been normal.

Thoracopagus.

DR. RIDLER read the notes of a patient, aged thirty-six years, who had been admitted while in labour on August 6, 1922. The pregnancy had been normal. Labour had commenced at 9 a.m. on the day of admission and dilatation had become full by 9 p.m.. There was a vertex presentation. An attempt had been made at the patient's home to deliver the head. This had been successful, but difficulties had been experienced with the shoulders. The arms had been delivered. The patient had then been sent to hospital with the head and arms outside the vulva. After the patient had been allowed to recover from the effects of the shock and of the journey, she had been anaesthetized. The uterus had been explored and it had been determined that two fetuses had been present. The delivery of the first had been completed and it had been thought that the second fetus was attached abdominally to the first. It was placed in a transverse direction with the head to the right. Dr. Farranridge had then brought down both legs of the first fetus and had delivered the breech of the second fetus. The last part to be delivered had been the after-coming head of the second fetus. The combined weight of the conjoined twins had been four and a half kilograms. Both were female. The fetuses had been joined laterally in the regions of the chests, thus presenting the true thoracopagus type. There had been one placenta. The fetuses were dead when born. The mother had recovered well. Some vaginal bruising had taken place.

Demonstrations.

Demonstrations were held in the labour ward, in the ante-natal clinic and in the septic block.

Puerperal Sepsis.

DR. WILLIAM T. CHENHALL read a paper entitled "Puerperal Infection: Its Prophylaxis and Treatment" (see page 317).

Pre-Maternity Work.

DR. JOHN HARRIS apologized for the absence through illness of Dr. J. C. WINDEYER and gave a short description

of the pre-maternity work conducted in the hospital. We publish the paper prepared by Dr. Windeyer on page 325.

Cæsarean Section.

DR. CONSTANCE E. D'ARCY read a paper entitled "Indications for Cæsarean Section" (see page 322).

TRANSACTIONS OF THE COUNCIL OF THE VICTORIAN BRANCH.

THE following is a summary of the more important transactions of the Council of the Victorian Branch of the British Medical Association during the past few months:

Medical Agency.

The Agency has extended its usefulness to members. It has made arrangements with two assurance companies whereby all sickness and accident policies may be taken up at a rate of 15% to 20% less than ordinary current rates. The Agency will also indent medical journals and textbooks for members and will give them advantage of commission and exchange.

Manchester Unity Independent Order of Oddfellows.

A further conference with delegates of the Manchester Unity Independent Order of Oddfellows was held in order to discuss terms of settlement for the lodge dispute. The delegates seemed disposed to advocate a settlement at their annual conference. However, the annual conference postponed the question for twelve months. It came to the knowledge of the Council that by a secret defection of some of the members of the Victorian Branch the Manchester Unity had been enabled to survive under its pool system. The Council resolved to hold meetings of members in all the metropolitan divisions and to circularize members in country divisions. At the meetings in the suburbs it was ascertained that the report given to the Council was true and as a result of the mutual interchange of opinions amongst members resignations of contracts have been sent in. The Council again informs members that no contracts, written or implied, shall be made with members or lodges of this Order. Its members should be charged the usual 10s. 6d. fee per consultation or visit without any modification.

Private Contracts.

The Council expressed its opinion that any extensive system of private contracts would be prejudicial to the interests of the medical profession; but as such contracts have been established for so long a time, no definite action was suggested at the present time with a view to terminating them. However, the Council decided that in future, in the event that medical practitioners entered into private contracts, a minimum fee of £4 4s. *per annum* should be charged, the income of the patient should be not more than £500 and the terms of the Wasley Award in other respects should be applicable.

Melbourne Hospital Funds.

As a mark of appreciation of the courtesy of the Melbourne Hospital in placing the Walter and Eliza Hall Institute for Research in Pathology and Medicine at the disposal of the Council for its meeting, a gratuity of £10 10s. was voted to the funds of the hospital.

Librarians.

DR. W. D. G. UPJOHN was elected co-Librarian with DR. H. DOUGLAS STEPHENS.

Intermediate Hospitals.

The policy of the Council in this regard was reviewed and its present attitude was given to the State Treasurer, who had asked for a private interview with representatives of the Council. This matter is now before the State Parliament.

Section of Psychiatry and Neurology.

A Section of Psychiatry and Neurology has been formed and DR. PAUL DANE has been appointed Honorary Secre-

tary. It will hold its meetings on the third Monday in each month at the Medical Society Hall.

Guarantee Fund.

Copies of an audited balance sheet of all moneys received and expended in connexion with the lodge dispute were sent to each Honorary Secretary of Division for the information of its members.

Election of Members.

Arrangements were made with the Medical Students' Society whereby the Society induces recent graduates to join the Victorian Branch of the British Medical Association and the latter body pays commission *per caput* to the Society. By this mutually satisfactory arrangement forty new members were enrolled.

"The British Medical Journal."

It was decided to provide spare copies of *The British Medical Journal* to medical students at £1 5s. 6d. *per annum*.

Warning Notices.

The Council asked the Students' Societies at the hospitals to put up a notice setting forth the inadvisability of any recent graduates accepting *locum tenens* work or appointments without consulting the Secretary of the Victorian Branch.

Salaries of Health Officers.

The Council decided to approach once more the municipal councils, urging them to pay to their medical officers of health the salaries recommended by the Public Health Commission and at the same time pointing out that by a recent arrangement the salaries of all municipal officers had been largely increased with the exception of the medical officers of health, who did not come within the purview of the Court. Reports to hand from the municipalities show many and in some cases large increases in the salaries of the medical officers of health as a result of the appeal by the Council.

Practitioners Ineligible for Membership of the Association.

Two resolutions were adopted by the Council:

(1) The sale of a practice by a member of the Victorian Branch to a practitioner ineligible for membership of the Association shall not be effected.

(2) No practice of a doctor ineligible for membership shall be purchased by a member of the Victorian Branch unless such purchase shall be directly agreed to by the members in the district concerned; and such purchase shall be subject to the approval of the Council of the Branch.

This resolution does not apply to the sale of the ethical portion of the practice after the death of the incumbent, but such sale shall be subject to the approval of the local Division.

Resuscitation of the Apparently Drowned.

At the request of the Royal Life Saving Society a sub-committee of the Council investigated the merits of the various methods for the resuscitation of the apparently drowned. The Council informed the Society that in its opinion the Schafer method had undoubted advantages over all other methods.

Tuberculosis in Returned Soldiers.

The Secretary of the Returned Sailors' and Soldiers' Imperial League of Australia reported that the Repatriation Department had a rule which precluded medical assistance being given to a returned soldier if he did not apply for treatment for tuberculosis until after two years from the date of his return to Victoria and asked for an opinion as to the period in which tuberculosis could develop.

The Council gave its opinion that in the case of a patient reporting with tuberculosis, it is very difficult to determine accurately when the tuberculous condition developed. It was not possible to fix arbitrarily the time-limit beyond which the apparent development of tuberculosis must be ascribed to conditions other than war service. In its opinion each individual case should be decided on its merits. The Secretary of the Returned Sailors' and Soldiers' Imperial League of Australia was also informed that on good authority the Council was given to understand that each case was treated on its merits.

Illegal Practice.

On information supplied by the Council "Doctor" Chockson, Chinese herbalist, was fined £25 with £1 ls. costs and "Doctor" Chalmers, of Werribee, was fined 10s. and costs. The Council has lodged an objection with the Crown Law Department on the finding of the Police Magistrate that a "technical offence only" had been committed.

The Chief Commissioner of Police, at the wish of the Council, also took action against three Chinese herbalists for misleading the public by using the title "doctor."

NOMINATIONS AND ELECTIONS.

THE undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

ROBERTS, JOHN LESLIE, M.B. 1922 (Univ. Sydney).
"Hotel Sydney," Sydney.

CORRIGENDUM.

AMONG the list of newly elected members of the Western Australian Branch of the British Medical Association the name of DR. ERNEST JOHN FRAYNE was published in the issue of THE MEDICAL JOURNAL OF AUSTRALIA of September 2, 1922, page 284, instead of that of DR. W. R. G. FRAYNE.

Medical Societies.

BRISBANE GENERAL HOSPITAL CLINICAL SOCIETY.

A MEETING of the Brisbane General Hospital Clinical Society was held on August 17, 1922, DR. EUSTACE RUSSELL, the President, in the chair.

Asthma.

DR. EUSTACE RUSSELL presented three patients suffering from asthma. The first was a male, aged forty-nine years, a baker. He had suffered for twenty years and had had frequent attacks of colds. Pulmonary fibrosis was present. Dr. Russell raised the question whether the condition was due to dust from his occupation or to nasal trouble. The second patient was a male, aged twenty-two years, a labourer. The supposed cause was a suppurative condition of the accessory sinuses. The third was a male, aged forty-two years. Hypnotics and adrenalin had no effect on the dyspnoea. All attempts to discover a focus had failed. He had a great deal of mental worry. Dr. Russell suggested that this might be a psychological cause.

DR. ANDREW STEWART defined asthma as a paroxysmal dyspnoea due to an unknown cause. This would exclude asthmatic attacks associated with renal, cardiac and accessory sinus lesions as well as fibroids. Asthma was due to a faulty metabolism, especially of carbo-hydrates. Patients were generally too fat or too lean, especially the latter. As a rule it did not occur in persons of normal weight. From his observations in Queensland a person one hundred and fifty centimetres in height should weigh fifty kilograms and for every additional centimetre eight hundred and ninety-two grammes should be added. The thin patients should therefore be fed and the weight of the stout ones reduced by dietetic measures. He gave iodide of potash and arsenic. If the patient showed signs of iodism, he gave the glycerine of hydriodic acid or the tincture of iodine of the French Codex. For impending attacks acetyl-salicylic acid in powder form was good. The acute phase required the judicious use of adrenalin. Owing to the great danger of forming a habit, he was strongly adverse to the use of morphine. Cauterizing the nose had no lasting effect, but if a patient were relieved by dietetic measures and still remained a mouth breather a nasal operation might prove beneficial. The pollen theory reminded him of the old yarn about the flowering of the jacaranda and the onset of gastro-enteritis. The observation was right, but the deduction wrong. Early flowering meant plenty of rain and the breeding of flies. Many patients with so-called pollen asthma were not relieved by

change of climate. The influence of climate has been greatly exaggerated. The condition was relieved temporarily, but inevitably returned.

DR. J. LOCKHART GIBSON stated that he was accustomed to give not less than 1.2 grammes of potassium iodide every three hours. He added strophanthus if the heart were weak.

DR. A. GRAHAM BUTLER, D.S.O., did not agree with Dr. Stewart that if there were a local cause in a spasmodic contraction of the bronchial tubes it should not be called asthma. He would exclude from the definition cardiac affections not relieved by adrenalin. Anaphylactic conditions must be included. The eosinophilia was an anaphylactic phenomenon and not one due to faulty carbo-hydrate metabolism. He referred to the difficulty of obtaining proteins for the tests.

DR. E. S. MEYERS thought that it would be very difficult to fatten or reduce the average patient. All asthmatics showed eosinophilia and reacted to arsenic. He stated that Bull had grouped many of the proteins and the material was now available.

DR. EUSTACE RUSSELL stated that asthmatics could be grouped under two headings: (i.) True asthma with a sensitization especially to eggs and milk and traceable from childhood. The condition was generally associated with a neurosis, such as urticaria and eczema. (ii.) Asthmatic bronchitis due to an infective condition of the bronchial mucosa and upper air passages. Between attacks the true asthmatic was free from symptoms, while the person with asthmatic bronchitis showed signs of bronchitis. He pointed out the need to remove tonsils and adenoids in youth as a preventive measure. He agreed with Dr. Stewart regarding the value of iodides and arsenic, if given for a period of at least three months. The iodide would not increase the weight, but it would liquefy the sputum and enable it to be more easily expelled. He strongly deprecated the use of morphine. Adrenalin and atropine were of great value. His experience of peptones had not been very pleasant. Several severe attacks of anaphylaxis had caused him to give them up. He thought that in most countries nasal cauterization had been abandoned. There was no special virtue in any particular climate. If the patient were removed from his special pollen, climate might have a beneficial effect.

Prostatic Enlargement.

DR. A. G. ANDERSON, in opening the discussion on the treatment of prostatic hypertrophy, read the notes of two cases: (i.) A male, aged fifty years, complained of frequent and painful micturition and occasional attacks of retention. The urine had a specific gravity of 1.020 and contained traces of pus and albumin. The total daily amount was 1.75 litres. The blood pressure was 135 millimetres. There was an irregularly enlarged, adenomatous prostate. (ii.) A male, aged seventy-nine years, suffered from inability to pass urine and great dysuria. He had used a catheter for years. He was a feeble old man with thickened arteries and high blood pressure. The prostate was irregularly enlarged and hard. He considered that the first patient was suitable for operation, while the risk of operation on the second patient would be great.

DR. W. H. NETTE gave a demonstration of the Cathcart apparatus for post-operative drainage of the bladder.

DR. C. A. THELANDER stated that the prostatic enlargement was not *ipso facto* the cause of operation, except when malignant. It was removed not because of its size, but owing to the onset of urinary symptoms. If a patient secreted 1.5 litres of urine with an average specific gravity of 1.015, he was not in distress. Age was no contra-indication to operation. High blood pressure was a contra-indication for an immediate operation, but not for the two-stage operation. After preliminary drainage the blood pressure frequently fell. In discussing the suprapubic operation he described a perforated glass bulb with a constricted neck and a flange which he had found very useful for drainage in the two-stage operation. There was no leakage and consequent soiling of the wound. He had used the perineal route in two operations for malignant prostatic growths. Rapid healing occurred in one patient, but a fistula developed in the other. This operation was facilitated by the suggestion of Dr. McKillop to separate the

recti and to press the prostate well down into the perineal incision. He had also used Ochsner's method of cutting down on a lateral lithotomy staff and working under and round the capsule. This was greatly assisted by inserting the finger through a suprapubic opening into the bladder and pressing the prostate downwards. A tampon soaked in oil and attached to a string brought out of the suprapubic opening was very useful in preventing hæmorrhage from the prostatic bed and the formation of phosphatic deposits.

DR. D. A. CAMERON considered that if the obstruction were not due to stricture, the prostate should be removed. It was unnecessary to consider the blood pressure, as it always fell after operation. The after-treatment was most important. He always used a large tube with a small catheter attached to the inner or outer side. Fluid was allowed to run into the bladder through the catheter and escaped by the large tube. Drainage should be maintained in the presence of sepsis for ten days, while, when there was no sepsis, it could be stopped at an earlier period.

DR. J. B. McLEAN, D.S.O., advocated the two-stage operation for the majority of patients. Though the perineal operation was rarely performed at the Brisbane Hospital, it was a good one. He considered that it should be done for the large, soft prostates and not, as generally taught, for the small, hard ones, because of the strong attachment of the latter to the rectal wall and the risk of perforation. However, the suprapubic route allowed of better examination of the prostate, especially when a malignant growth was present and when the middle lobe was the sole source of trouble. The pre-operative treatment was most important. The heavy mortality was largely due to the extra strain thrown by the operation on a kidney already damaged. In regard to after-treatment, it was necessary to remember that the patients were feeble men, both mentally and physically. Cathcart's apparatus was the best for drainage of the bladder, though it should not be used until all blood clots had been removed. This was done by washing out the bladder every three hours. The patient should be propped up in bed, fed well and allowed to get up as soon as possible. The wound after the perineal operation healed quicker and there was less discomfort. Occasionally there was alarming post-operative hæmorrhage. He had obtained good results from hæmostatic serum, though the blood clots were often difficult to remove. Direct pressure with a swab attached to a ligature was sometimes necessary.

DR. J. A. CAMERON considered that all patients with symptoms should be subjected to operation. The symptoms were liable to recur and finally to kill the patient. A considerable proportion of the growths were malignant, while a calculus was not infrequently present. There was often trouble from the post-operative formation of phosphatic deposits and calculi. Attempts at keeping the urine acid did not always prevent this complication. He considered the silver catheter to be preferable to the rubber for continual use for patients refusing operation. There was less damage to the urethra and less liability to infection.

DR. M. GRAHAM SUTTON referred to the use of very dilute solutions of hydrochloric acid as a bladder wash in the prevention of prostatic concretions. He agreed with Dr. Cameron that the silver catheter was preferable to the rubber. As the main cause of unforeseen post-operative mortality was uræmia, there was great need for accurate renal efficiency tests before operation. In addition to the use of hæmostatic serum to coagulate the blood, he mentioned parathyroid extract and calcium lactate extract prepared according to Blair Bell's formula.

DR. E. S. MEYERS stated that in 1920 and 1921 eighteen patients in the Brisbane General Hospital had undergone prostatic operations. Eleven had been relieved or cured and seven had died, giving a mortality of 39%. This showed the great need for improvement mainly as regards earlier operation.

DR. W. H. NETTE mentioned the method of estimation of renal efficiency as used by Dr. Gordon Craig. The patient was given a large amount of water and the specific gravity taken at short intervals. The curve of rise in specific gravity gave an indication of the efficiency of the kidneys. Patients showing an unsatisfactory excretion curve were unsuitable for operation.

Correspondence.

BIRTH CONTROL AND LAND SETTLEMENT.

SIR: A friend has sent me some colonial papers publishing more or less solemn warnings about "race suicide" and reporting recent arbitration court utterances deploring small families in the homes of the workers. It is interesting of course to see that the Arbitration Court Bench may at times be made a pulpit as well as a platform, but some ten or fifteen years' experience as an Arbitration Court reporter in Australia and New Zealand did not teach me that judges were remarkable for large-sized families of their own and since the time of Mr. Justice Higgins's finding in the "Sunshine Harvester" case the Arbitration Courts have admittedly or tacitly taken the family unit as five persons—father, mother and three children and allocated wages accordingly. Their Honours are surely therefore doubly disqualified, personally as well as judicially, to preach the benefits of large families for the working classes.

In any case, the great need in the colonies is not more trade unionists in the towns, but more settlers in the back blocks, more country dwellers of all kinds. But the back country is not fit for women to live in unless the women know how to regulate the size of their family. Men won't stop in country districts because women and children are indispensable to them and only a few women have sufficient strength of mind and character and physique to be able to endure the hardships of life in the back blocks. Take this case: A woman living alone with her husband—a back blocks settler—was suddenly called upon one night to face her first child-birth before she anticipated this event. Her husband took their only horse and rode to the nearest woman neighbour many miles away. Through the night along an unknown track the horse found his way back with the emergency helper, but when she dismounted to open the farm gate the horse bolted. She struggled on across ditches and creeks towards the distant lighted window. Arrived, she found the baby born and lying face down in a pool of its mother's blood and the mother's life tide fast ebbing across the bar. When I think of the thousands of births and deaths and miscarriages that country women have had to endure in the past all over Australia and New Zealand, I wonder that anybody can be found cruel enough to wish to deprive them of knowledge which would abolish so much useless agony; and still more I wonder how anybody can be so unintelligent as not to see that land settlement on a large scale will never be possible till the settlers' wives are able to choose voluntarily how many children they have and when they have them. I am quite satisfied that there are very few colonial women, who have been free to marry early in life, who would wish to have less than four children, but when they are asked to have fourteen children life becomes unbearable to the majority of women. A few pioneer women have survived the ordeal; as to the others, their graves are scattered far and wide and God alone knows the tragedies and agonies they passed through before they became entitled to the privilege of even this rest. With the development of motor transport, wireless telephones, electrical installation, agricultural machinery and all sorts of other practical applications of science to country life women and children could be happy and comfortable even at the back of beyond, provided only that the wife and mother is able to select suitable occasions for the bearing of her own children.

Any apparently less number of children would be more than compensated by the superior health of children and mothers and by the longer life of the mother herself. Considering that New Zealand has at the present time the unenviable reputation of a very high maternity mortality, due in part to lack of medical service in country districts and to deplorable efforts to procure abortion, it would surely be wiser to decrease rather than increase the number of child-births.

And apart from this, we all know that sterility among married women is often the consequence of venereal disease—disease which could have been prevented if the very people who are now opposing birth control had not more

or less successfully hindered the cleansing efforts of doctors and lay workers like myself.

There are many ways in which the Australasian nations may increase and prosper, but the encouragement of reckless, irresponsible and uncontrolled fecundity is not one of them. So long as that condition of affairs prevails, so long will men, women and children be compelled to crowd into the towns instead of spreading out over the country.

Yours, etc.,

ETTIE A. ROUT.

London, June 27, 1922.

DIATHERMY AND RADIO-THERAPY.

SIR: I was very interested to read Dr. Kent Hughes's paper on diathermy. I have been impressed with the value of this form of treatment in some varieties of rodent tumour and epithelioma, but cannot agree with the wide application to all rodent growths of a diameter of three millimetres or more. I cordially agree with several of his expressions of opinion. Radiation treatment should not be continued longer than six months. I have tried and discarded carbonic acid snow for the reasons he quotes. The paragraphs urging the recognition and treatment of pre-rodent keratoses are highly important. I instil this doctrine into every fresh batch of students who come into my class. But I should like to ask Dr. Hughes to change the nomenclature. These keratoses have nothing to do with senility. They are seen in the thirties and even in the twenties in fair and red skinned out-door folk. They seem to be due to sunburn and to precede either rodent or squamous epithelioma. Sunburn or pre-epitheliomatous keratosis is a more accurate term.

It may be admitted that X-rays may stimulate the growth of rodent tumours if nibbling, tinkering doses are applied. It is for this reason that the measured, massive dose method is so strongly advocated. But X-rays do not cause rodent tumours. They may and sometimes do cause squamous epithelioma, especially if tinkering doses are used or if applied for too long.

Of course, it is very gratifying to every modern user of X-ray to have Dr. Kent Hughes recant to some extent from the doctrine he upheld at the Brisbane Congress in opposition of X-ray therapy and his expression that "there can be no possible doubt of the truth of the statements" in favour of radiation are most welcome, even if rather grudging in tone. But will Dr. Kent Hughes not be generous, forget old prejudices and admit X-ray therapy to its proper position in the management of these cases? Of course, we all know that any sick is good enough to beat a dog and that in Dr. Kent Hughes's opinion radio-therapy is a very dirty dog, but I submit it is a pity to exhibit even a suspicion of prejudice and to call upon imagination in a discussion of the relative merits of different methods of treatment.

The whole paper shows the persistence of an old prejudice, engendered I know not how or by whom, which obviously influences his conclusions. For example, the zone of heat coagulation by diathermy either included or failed to include all the rodent cells. In the latter case recurrence occurred. The fibrotic formation due to radiation treatment will not prove less conducive to high frequency current and limit the zone of coagulation. The explanation probably lies elsewhere. The probability is that the majority of the patients, including those referred to by Dr. Hughes, will have had previous treatment by radiation.

Dr. Kent Hughes's experience must have been singularly unfortunate. Medical practitioners who keep patients under radiation treatment for twenty-five years must have been pioneers—so must the patients. X-ray pioneers are nearly all dead and their first patients must be excessively rare too. How does Dr. Kent Hughes know of so many such patients? He admits that he sees only the failures. We see and not infrequently cure the failures of surgical measures, but we do not decry surgical measures. With deep therapy we may yet see and cure failures of diathermy. Failure by surgery, radiation or diathermy is either inevitable or is due to errors of technique or of judgement. Incomplete excision of a rodent tumour or any other tumour

will frequently accelerate the growth. But surgical excision is not therefore taboo.

I am going to put the advantages and disadvantages of X-ray and diathermy treatment of rodent ulcers. On the side of X-rays are less expense, no interruption of earning, no pain and an almost invisible scar, no anæsthetic, no lying up, no shock, but longer duration of treatment. On the side of diathermy are shorter total duration of treatment, but anæsthetic necessary, some pain, some shock, more expense, rest in bed necessary, impossibility of treating the accompanying pre-rodent conditions efficiently, even some fear of secondary hæmorrhage and sometimes the necessity for further anæsthetic and skin grafting. If there were greater efficiency in diathermy, it would take precedence over X-ray therapy. But if X-ray therapy, properly applied, yields 90% of cures inside of the six months' limit or even less (and I am sure that Dr. Hughes will accept my statement that the figures extracted from my private case cards show that this is true), X-ray must be given preference, even if it makes diathermy or surgery more difficult in refractory cases. I cannot believe that Dr. Kent Hughes will insist that previous irradiation will endow any cell with the power of resisting heat-coagulation necrosis.

Finally—and for this I am indebted to the Editor of THE MEDICAL JOURNAL OF AUSTRALIA—it is to be noted that diathermy and surgical excision necessitate destruction of healthy along with diseased tissue—"mutilation," in fact. A facial nerve must be sacrificed in diathermy as in surgical excision. I think that pride in our art should lead us to prefer a method which selects the diseased cells and spares at least the majority of healthy cells. As Herbert Spencer teaches: "There is nothing wholly good or wholly bad!" and all methods have their usefulness and all their faults. Radio-therapy has now universal acceptance and has made such great strides that I think it merits far more respect than Dr. Hughes allows it.

Yours, etc.,

E. H. MOLESWORTH.

"Beanbah," 235, Macquarie Street,
Sydney, August 19, 1922.

TRACHOMA.

SIR: I take off my hat to any man who tries to solve a medical problem from the pathological side. It is, therefore, in no carping spirit that I make these few comments on Dr. Newman's interesting paper on trachoma (THE MEDICAL JOURNAL OF AUSTRALIA, September 2, 1922).

With all his views on the value of hygienic and general health measures in trachoma I am in full agreement. But, as to topical treatment in early cases I cannot believe that one is doing one's duty by pursuing a policy of such masterly inactivity as he recommends.

It will be remembered that the early stages of trachoma are characterized by the formation of well-defined clumps of lymph cells, termed follicles, in the adenoid layer beneath the conjunctiva; and these follicles soon appear on the tarsal area.

Now the formation of follicles is not pathognomonic of trachoma. They occur in follicular conjunctivitis, in atropine irritation and as a result of some other irritants. It is the exuberant subsequent course of the process accompanied by permanent changes in the tissues that sets the seal of trachoma upon it. Are we to wait for these changes before attacking the enemy? Soon in trachoma the sub-epithelial tissues will be infiltrated by a leucocytic invasion and the fell process will have gained a good start. Dr. Newman is very mindful of the epithelium and rightly so; but of two evils we should choose the less. Even in the early stages according to MacCallan, a great authority, the epithelial covering of the follicles is so thin as to be almost non-existent. If this is destroyed I think it will very readily be replaced.

The most favourable course is that the follicle should be absorbed by the lymph stream. A gentle irritant such as silver nitrate, properly applied, gives the needed stimu-

lus to phagocytic action. If this does not quickly clear up the trouble, in my opinion mechanical expression of the follicles from fornices and tarsus will in the long run cause less scarring than will the disease if allowed to invade the deeper layers of the tarsus itself.

A word about nitrate of silver "brushing." I have heard of instructions being given to nurses to swab the everted lids with nitrate in 1% or 2% solution and after twenty minutes to wash out with saline solution. This no doubt causes intense pain and orbicular spasm. My own practice is to cocaineize the eye well, apply the solution on a swab not wet enough to allow any surplus to overflow into the conjunctival sac generally and after twenty seconds or so to neutralize with saline solution. This will cause a minimum of orbicular spasm, with sufficient irritation to set up some reaction in the diseased tissues.

Tarsectomy is a valuable procedure in old cases with corneal irritation and I am glad to see that Dr. Newman apparently reserves it for such. It was vaunted by its pioneers as a short-cut to cure of an active case. I can only from my own experience warn others from doing it while any active disease remains in the fornices. I have seen some very bad results from neglect of this precaution. It should never be done in children. The only two cases of xerosis I have seen were in children on whom tarsectomy had been done—I am sure with the best of motives. Done on a selected and suitable case, one obtains a brilliant result and a grateful patient.

Having formerly practised in a trachomatous country, I speak with some experience and not as the scribes. My considered opinion is that less harm will be done in early trachoma by energetic action on proper lines than by merely using zinc drops and hygienic measures. If one can get resolution or resorption or removal (by any means) of the lymph follicles while they are relatively few and before the whole sub-epithelial layer is infiltrated, the epithelium may be safely left to take care of itself.

Yours, etc.,

E. TEMPLE SMITH.

"Craignish," 185, Macquarie Street,
Sydney, September 5, 1922.

ACUTE PULMONARY ŒDEMA.

SIR: I cannot agree with Dr. Southwood's statement that "the immediate cause of these very acute attacks of œdema is the rapid failure of the left side of the heart." Were the problem a purely mechanical one, it would be reasonable to assume that practically any case of rapid dilatation of the left side of the heart could give rise to the disease, which should therefore be not uncommon. Yet such is not the case.

It is my opinion that such attacks of pulmonary œdema are of nervous origin and allied to angio-neurotic œdema. It is, of course, quite possible that a diseased heart or kidney condition may predispose to an attack. I have seen two cases of acute pulmonary œdema and it is because of my *post mortem* findings in the latter of them that I bring the case to Dr. Southwood's notice.

The patient, who was under the care of my colleague, Dr. D. D. Cade, while stooping to undo his boot-laces fell forwards and within a minute or two was unconscious, with contracted pupils and with blood-stained froth oozing in large quantities from his mouth. He was given large doses of morphia hypodermically, but was dead within half an hour.

The "post-mortem" showed a wide-spread recent hemorrhagic meningitis confined to the pia-arachnoid and extending over the whole of the surface of the brain and spinal cord and especially marked in both Sylvian fissure areas. This finding is interesting in view of the hemiparesis reported by Dr. Southwood in one of his patients.

It would appear to be that the disease is essential hemorrhagic, probably due to a sudden permeability in the capillaries, particularly in the areas where the minute vessels are practically unsupported. My opinion, however, is purely tentative and is advanced merely because I do not think that failure of the left heart is sufficient to

account for the symptoms which have such a dramatic onset.

Yours, etc.,

J. CATARINICH.

Hospital for Insane, Mont Park,
Victoria, September 5, 1922.

DRIED MILK.

SIR: I have been following with interest the discussions as to the suitability of dried milk for infant feeding. While I was a resident medical officer at the Children's Hospital, Brisbane, in 1918-1919, I had to examine and treat many hundreds of infants suffering from gastro-intestinal disturbances and in all cases I inquired particularly as to the method of feeding previously employed.

I had no time to make a permanent record of my investigations and am now quoting from memory, but I remember clearly three outstanding facts in connexion with these cases:

(i.) As one would expect, very few purely breast-fed babies became infected with gastro-enteritis and only two died during the year.

(ii.) The artificially-fed children who were affected were more frequently fed on condensed milk, "Lactogen" and "Glaxo" than on cows' milk.

(iii.) Although a great number of babies fed on cows' milk became ill, they had far greater powers of resistance than those fed on the patent foods mentioned above. Comparatively few babies fed on cows' milk were seriously ill and still fewer died. These children always put up a good fight against disease, whereas the fat "dried milk" babies went down without a struggle.

I made the mothers of in-patients bring the babies to the Out-Patient Department for weeks after their discharge until they were of normal weight. Although it was a hot summer and the mothers of the usual hospital class, I found the children did far better on a diet of cows' milk variously modified than on their previous condensed or dried milk diet.

Yours, etc.,

ELLEN KENT HUGHES.

Kingaroy, Queensland,
August 5, 1922.

Obituary.

ALEXANDER NICOLL.

It is with regret that we have to announce the death of Dr. Alexander Nicoll, of Gympie, Queensland, which took place on September 6, 1922.

Books Received.

DISEASES OF THE THYROID GLAND, by Arthur E. Hertzler, M.D., F.A.C.S., with a chapter on "Hospital Management of Goiter Patients," by Victor E. Chesky, A.B., M.D.; 1922. St. Louis, U.S.A.: C. V. Mosby Company; Crown 4to., pp. 245, with 106 figures. Price: \$5.00.

Medical Appointments.

DR. R. J. FULLERTON (B.M.A.) has been appointed Public Vaccinator at Egerton and Gordon, Victoria.

DR. R. H. LEEDS (B.M.A.) has been appointed Government Medical Officer at Warren, New South Wales.

DR. JOHN COFFEY has been appointed Health Officer, Department of Public Health, Queensland, on probation, in the room of Dr. C. D. H. RYGATE (B.M.A.), resigned.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmmain United Friendly Societies' Dispensary Friendly Societies Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marrickville United Friendly Societies' Dispensary North Sydney United Friendly Societies People's Prudential Benefit Society Phoenix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Manchester Unity Independent Order of Oddfellows Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Hampden District Hospital, Kurildala, North Queensland Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 12, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, 34, Innes Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington, New Zealand

Diary for the Month.

- SEPT. 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 SEPT. 20.—Western Australian Branch, B.M.A.: Branch.
 SEPT. 20.—South Sydney Medical Association, New South Wales.
 SEPT. 22.—Queensland Branch, B.M.A.: Council.
 SEPT. 26.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
 SEPT. 27.—Victorian Branch, B.M.A.: Council Meeting.
 SEPT. 28.—South Australian Branch, B.M.A.: Branch.
 SEPT. 28.—Brisbane Hospital for Sick Children: Clinical Meeting.
 SEPT. 29.—New South Wales Branch, B.M.A.: Election of Two Members of Federal Committee.
 SEPT. 30.—Victorian Branch, B.M.A.: Election of Two Members to Federal Committee.
 OCT. 1.—Victorian Branch, B.M.A.: Election of Representatives of Divisions.
 OCT. 3.—New South Wales Branch, B.M.A.: Council (Quarterly).
 OCT. 4.—Victorian Branch, B.M.A.: Branch.
 OCT. 6.—Queensland Branch, B.M.A.: Branch.

Editorial Notices.

MANUSCRIPTS forwarded the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)

SUBSCRIPTION RATES.—Medical students and others not receiving the THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and book-sellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad per annum payable in advance.